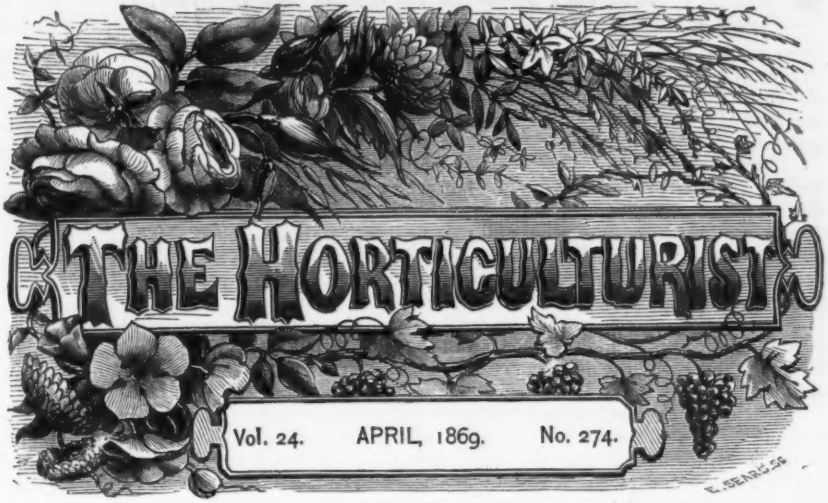


Additional Hints on Marketing Small Fruits.

BY B. N. COMMINGS, NEW-BRITAIN, CT.

THE culture of small fruits is extending so widely throughout the country, that every fact relative to their proper care and means necessary to secure highest market prices becomes of vital interest to every fruit-grower.

In addition to what has hitherto been said on the subject of shipping fruit for market, I add a few notes that have come under my immediate observation.

Last year, I observed that berries shipped in good packages from Virginia, Maryland, Delaware, and South-Jersey sold for high prices, while thousands of quarts picked on the same days, and shipped by the same route in tight, square, or gift boxes, were either thrown away as worthless, or sold at prices that made little or no return to the grower. It is now pretty well understood among commission men and retail dealers that no tight box, no box with many perpendicular sides nor with many sharp edges, can bring berries to market in good condition, and dealers generally refuse to handle such packages, and close them out at a discount.

Crates, too, are used of great variety of patterns and inferiorly made. It is hardly necessary for me to urge what has been often repeated before, that all crates should be of the strongest material, thoroughly bound and ironed at the corners, and as neatly planed as possible. Good looks in berry baskets and crates are a decided help to sales.

The berry baskets themselves should be broadest at the top, so that the berries may *support* each other. In a box or basket with perpendicular sides, the whole weight of the berries rests on the bottom, and as a result in long distances the entire mass is smashed and ferments. A good berry-basket, whether square or round, should have ventilated sides and slope from the top inward.

All perishable fruits require ventilation in proportion to the warmth of the weather and the amount of water they contain, and the rapidity with which they part with it. Most fruits can be preserved for a long time in a cold, dry atmosphere without ventilation.

Apples may be preserved at a temperature just above freezing for months without decay. At a temperature of 80°, the best of winter apples in tight barrels will spoil in a few days. We have seen early potatoes shipped in July in tight barrels nearly ruined on the passage from Norfolk to New-York. A man might as well attempt to live without air as to transport strawberries any considerable distance without ventilation. It is possible, however, to have too much of a good thing. A ripe strawberry laid in an

open window or on a shelf will wilt and shrink up in a very short time. In very warm, drying weather, strawberries in a basket so open as to admit of a free circulation through the entire basket will shrink one fifth of their bulk in a single day. The ventilation of any kind of fruit should only be sufficient to convey off the vapor which exhales in a comparatively confined atmosphere.

FRUIT-CARS.—Cars for transporting fruit should be kept cool, free from dust, and sufficiently ventilated to carry off the moisture which may escape from the fruit. Nor is this all; fruit-cars should be adjusted with springs, to jar the berries as little as possible. It may not be very easy to secure all that we desire without an effort. The fruit growers of the great berry districts of South-Jersey, Delaware, and Maryland should combine to secure this result. If they would employ competent men and construct their own cars, if they can not get them without, they would save thousands of dollars annually. Car-building is not in our line, but we would advise that all fruit-cars should be put on the best possible springs, and the sides and top made double. On the sides of the car, near the roof, there should be hoods or cowls which will work as exhausters when the car is in motion.

The experiment has been repeatedly tried of transporting berries on ice, but it has generally proved a failure; the excessive moisture of the atmosphere injuring the fruit quite as much as it is benefited by the low temperature. A recent invention by J. Rutter, of Chester, Pa., promises to furnish on steamers and cars a large "Transportation Fruit-Box," so constructed that the vapor from the melting ice can not escape into the fruit apartment, thereby securing a low temperature and a dry atmosphere, a condition that must certainly preserve (at a temperature of from 40 to 50° Fahrenheit) strawberries in good condition from three to six days, according to the skill and care with which the principles of the invention are carried out. This will bring strawberries to the New-York market in good condition from South-Carolina and Florida, from three to four weeks earlier than can be supplied by the usual shipments.

Berries that can reach the consumer in a few hours after picking may be fully or even dead ripe; but in all cases of shipping to a distance, this condition should be anticipated by about half the time required in transit. If the Wilson strawberries are to be from 36 to 48 hours in reaching the market, they should be quite hard and the under side of a pink tinge. They will then ripen and become a deep red by the time they reach the market. Berries should, if possible, be picked in the cool of the day, or cooled off before shipping. At all times they should be removed from the sun as quick as possible after picking. In picking, the berry should never be squeezed or pulled off. The picker should seize the stem as near the berry as possible with the thumb and finger, and pinch or snap it off. Berries should always be assorted, and those of inferior quality sent separate, if at all. It will pay the grower to round the baskets handsomely. The buyer will always honor a full basket. Scant measure is an abomination.

Lastly, order all baskets early. Many delay ordering until a few days before picking, when it is almost impossible to obtain them in time. Many have lost their first and best pickings because of this very reason. The question is frequently asked, How many baskets are needed per acre? The answer depends entirely upon the distance from the market. If close at hand, a capacity of 2000 quart baskets per acre is necessary. If 100 miles or over from market, fully a double quantity is needed. Growers generally imagine their crates will be returned to them immediately after sale by the commission merchant. This is not correct; the buyer takes crate and all away sometimes to his store, allowing them to remain a day or two until sold, and then returning crate and baskets; or perhaps, as is often the case, shipping to distant towns in the interior of the country, where they are not liberated and returned for a full week or more.

An investment in good berry-baskets may appear at first sight costly, but since they can be used for three or four kinds of berries during each growing season, and will last for several years, the money, in addition to being *necessarily*, is yet *well* spent.

Careful attention in fruit-growing, by producing fruit of first quality and marketing it well, will never fail of handsome returns.

The Naomi Raspberry.

BY M. B. BATEHAM, PAINESVILLE, O.

THE Naomi Raspberry has been referred to in the columns of THE HORTICULTURIST and a few other journals, within the past three years, in terms of high commendation. From my opportunities for observation of its history, character, and value, I think that it promises to be one of the leading novelties of the horticultural world.

As it had its origin in this section of Ohio, and I am daily receiving letters of inquiry concerning it, I herewith give the truth in full as to what is known of it.

It was produced from seeds sown by Mrs. Gov. Wood, of Rockport, (now of California,) nearly twenty years ago, and did not attract any particular attention for a number of years, until Mr. F. R. Elliott, observing the beauty and excellence of the fruit and hardiness of the plant, by the consent of Mrs. Wood named it *Naomi*, and afterward published a drawing and description of it in THE HORTICULTURIST. In the report of the Department of Agriculture for 1866, Mr. Elliott gave a better representation of the Naomi, (along with other raspberries,) and the following descriptive remarks:

"Fruit large to very large, roundish, slightly conical or obtuse conical; grains large; color bright, rich red; flesh firm and sprightly, rich and delicious; canes strong, with numerous lateral branches when fruiting, brown, smooth, occasional inconspicuous spines; leaves broad lanceolate; very productive and hardy.

"The Naomi is comparatively a new variety, but observation of it for about twelve years, during which it has been grown with only good common cultivation, and entirely without winter protection—each year producing large and profitable crops of very superior fruit—induces me to place it in the department report, because of the great interest felt at this time in the cultivation of small fruits."

Coming from such authorities as these, of course it created an immediate attention and interest from the best practical horticulturists of the country. The Ohio State Horticultural Society having announced that a first-rate, *hardy* raspberry, of the Antwerp class, was yet a great desideratum, the committee of that society arranged a visit to the gardens in the vicinity of Cleveland, in the season of raspberry ripening, for the special purpose of examining the Naomi. This committee consisted of the following gentlemen: Dr. J. A. Warder, G. W. Campbell, N. Olmer, D. C. Richmond, N. L. Wood, M. B. Bateham, and quite a number of other visitors.

In a number of the gardens visited there appeared to be a confusion as to the purity and genuineness of the plants; even on the grounds of Mrs. Wood and Mr. Merwin, many plants called Naomi were pronounced spurious, and no large lot of undoubtedly pure Naomis was found until they reached Collamer, where, on the grounds of Mr. Hall, they found a beautiful display of the plants and fruit, and agreeing perfectly with the finest of Mrs. Wood's own specimens.

All were pleased with the appearance, quality, and productiveness of the Naomi, and regard the hardiness of the plant as an established fact.

This fruit has been grown at Collamer for more than ten years, in a variety of exposures, and as yet has suffered no injury from the winters or failed in producing a crop; and when sent to market, has invariably brought the highest price.

To subject it to a still harder test, boxes of the fruit were sent, in the hot days of July last year, to the cities of Boston, New-York, Philadelphia, Rochester, and Cincinnati, and arrived in excellent condition; the appearance and flavor of the fruit exciting the admiration of all. M. P. Wilder, P. Barry, and Thomas Meehan particularly testified to this fact by letters.

I am asked how the Naomi compares with other varieties of the same class, especially the *Clarke*, which is admitted to be also of fine quality and hardy. In appearance and character of fruit and plant, the Naomi resembles the *Franconia* more than any other variety; but the fruit seems to me firmer and of brighter color, with a little more sprightly flavor; but all who have seen the true Franconia when well grown are aware that it is among the very best, only lacking hardiness of the canes, which is possessed

by the Naomi. The Clarke I have not seen in its best condition of growth and fruitage —only young plants bearing a half crop. The fruit is of good color and flavor, and the plants vigorous and hardy, with more abundant foliage than the Naomi, and hence may be better adapted to warm climates and unfavorable soils. Mr. Campbell exhibited a good dish of the Clarke at the meeting of the committee in Cleveland, and when compared with the Naomi, the latter berries were a trifle the largest and firmest. After the meeting, a gentleman who had both varieties in bearing told me he thought the Naomi more productive, and superior as a market fruit.

At the meeting of the State Horticultural Society, at Columbus, last December, there was a discussion on raspberries, and information being called for respecting the Naomi, Col. Richmond, of Sandusky, who is an extensive fruit-grower, said he was very much interested as one of the committee who inspected the raspberries around Cleveland the past summer, and he would say of Mr. Hall's Naomi crop that it exceeded any thing that he had before seen in this country or in Europe, and he had made the small fruits a study for many years, traveling thousands of miles to visit the most noted growers, and observing all the fruits in the markets. He was satisfied that Mr. Hall's and Mr. Swan's plants had received no extra care or cultivation, and no winter protection.

There has been a great negligence in allowing the Naomi and a large number of inferior seedlings to grow up together without taking pains to separate them ; Mr. Richmond, who had purchased one hundred plants for himself, found only ten or a dozen genuine. Now it is believed that the plants on the above-named place of Mr. Hall are of undoubted genuineness. As to the difference between the Naomi and Franconia, Mr. Elliott has already stated that he had both varieties in his grounds, and while there was much resemblance in the fruit, the Naomi, probably a seedling of the Franconia, still there was quite a difference in the superior hardiness of the plant of the Naomi, by which it was able to withstand the winters of Northern Ohio, while the Franconia, like the other foreign varieties of its class, needs protection.

A Cozy Cottage.

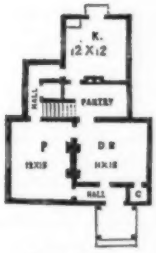
WE frequently hear many enthusiastic individuals, desirous of leaving the city for the country, express a wish for some " nice, cozy cottage," wherewith to help out to the full their enjoyment of country life ; or, again, in some inland town, or village perhaps, some young married couple wish anxiously for a "love of a cottage" of their own. The fact is apparent that the demand for *cheap* houses is fivefold that for villas of taste and luxury. An architect or builder ministering to the wants of an entire community will be more often consulted for a design to cost from $2000 to $5000 than for any plan over that sum. Hence, if we would spread the principles and practice of a choice taste for Rural Architecture throughout the country, we must exercise our ingenuity to present plans that will be acceptable to persons of moderate capital and moderate means.

The design we present upon the opposite page is of this nature. It is intended for a small family, yet it is so conveniently arranged as to supply all the room that is necessary. A glance at the plan will give all the explanation necessary.

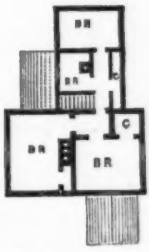
The foundation should be made of stone, and the cellar be placed under the extension. The lower part of the house is weather-boarded horizontally, and the upper part vertically, jutting out from the wall four inches. The height of the first story is 9 feet, the second is 9 feet in the centre, and four feet at the sides of the rooms. The roofs project, at an angle of 45°, nearly two feet over the sides of the house, and are covered with pine shingles.

The interior arrangement of the rooms, on either floor, may be altered to suit any occupant, but the general shape of the house may still be retained. The porch may be relieved from its bareness and simplicity by placing trellises at the sides and twining climbing-roses or rapid-growing climbers. The same may be also trained against the corners of the house, and thus impart a cheerful look, helping in the impression of the " coziness " of the retreat.

A COZY COTTAGE.



First Floor.



Second Floor.

The cost of such a cottage will be quite moderate. It was erected a few years since at Rutherfurd Park, N. J., for $2200; at the present time, in the neighborhood of New-York, its cost will be from $2500 to $3000. In our inland towns, where the price of material is much less, $2000 may be considered sufficient.

In the building of our country-houses, the greatest importance should be attached to a *choice* of *location*. Dr. Henry I. Bowditch, in a series of articles on consumption, traces the cause of that terrible disease, in many cases, to the unfavorable situation of the dwelling. He says:

"By all means avoid a wet soil as a spot for building, whether that place be on the hillside or in the valley. Or if it be already chosen and the homestead built, let a thorough under-drainage be made all around the house and to a considerable distance from it. Many may think that a hillside residence alone is sufficient. Far from it. One of our correspondents told us that, till he knew of our investigations, he could not understand why consumption entered almost every dwelling scattered over one of the hills in his own town, while it rarely was found in those upon a hill similarly situated with respect to sunlight, points of the compass, etc., and similarly wooded. There was, however, one very striking difference which he had always noticed between them, namely, that one had a dry, porous soil, upon which it was necessary to dig deep for wells, while on the other, water was reached a foot or two below the surface. The earth was, in fact, so full of water that whenever, in accordance with ancient superstition, the graves of those who had died were opened in order to procure certain relics for the benefit of some living but invalid relative, the coffins were always found full of water, although buried in very shallow graves.

We know a village situated on a wide, level plain, through which a sluggish river barely creeps along its winding course toward the sea. The whole earth on which these houses are built is literally reeking with water. This village has sprung up, mushroom-like, on each side of a railroad that runs through it. Already its situation is affecting the health of the inhabitants, yet no active general measures, we believe, have ever been taken to drain the town.

Build your houses in the country in preference to any place near the sea-coast. In the country, choose a slope rather than a plain to build upon, and where the sun can have full access to it, if possible, all the day. Be sure (if need be, by effectual subdrainage) that the soil is thoroughly permeable to water. Let no moisture from the soil, from any source, be permitted to distill its pernicious influences upon the future dwelling or its inmates. Let the rooms be large, of substantial breadth rather than height, and so pierced by windows that the air may have a bounteous and free entrance and exit. Let fire-places be built in every room and chamber—fire-places made for real use, not kept for show, and not closed with iron plates which are to be pierced for air-tight stoves. Outside of the house let there be ample space for air and sunlight. One or two trees may be permitted to grow near the house, but not to overshadow it, for nothing but evil comes from too much shade, either of trees or climbing-vines."

Vegetables—Their Growth and Cultivation.

BY THOMAS CAVANAGH, BROOKLYN, NEW-YORK.

SOIL.—The best soil for vegetables is a sandy loam, subsoiled or trenched at least two feet deep. If the soil is a hard gravel or very sandy, a top dressing of good loam will be beneficial. If the soil is a tenacious clay, then lime, plaster, and ashes will, to a certain extent, correct this difficulty. All these preparations may be expensive, but the sequel will show that the expense will be a paying investment.

SIZE OF A GARDEN.—If both the soil and situation are favorable, there will be little difficulty in having a good vegetable garden. The size of a vegetable garden will depend upon the wants of a family; one fourth of an acre will, under a skillful rotation of crops, yield as much as an acre under poor management. It is a general principle in horticul-

ture to raise the largest amount possible from the smallest surface. It generally gives more pleasure to see a small patch well tilled than a large patch well filled with weeds.

EARLINESS.—The chief object of a good gardener is to forward his vegetables as early as possible. He succeeds in this by attending to five general rules: *first*, and most important, is the selection of fresh seed; *second*, strict attention to the young plants when growing; *third*, total destruction of injurious insects and weeds when young; *fourth*, furnishing plenty of fertilizing material for the plants to feed on; *fifth*, keeping the soil loose and open to the various changes of the atmosphere.

The loss of a single day to the gardener has an influence felt through the entire season; his crop is just that much behindhand, and sometimes the whole season is lost in consequence. Experience teaches me the truth of this.

MANURE.—The question is often asked, What is the best kind of manure? and second, Is it better when decomposed than when fresh? The answer to the first question is, it is immaterial whether it is horse, cow, or pig manure; the amount of fertilizing properties in manure is in ratio to the food the animals have been fed on; manure from green food is not equal to that from stall-fed cattle. Second, with some varieties of vegetables, decomposed manures are to be preferred; small seeds, such as onions, carrots, and parsnips, do better in fine manure; still, many market gardeners use the very freshest manure with good results. One of the most successful cultivators I ever knew carried off the premium for years, for vegetables that were grown on land manured with fresh night-soil. Nevertheless, good well-rotted manure is always the safest.

ROTATION OF CROPS is another important matter connected with vegetable gardening. It is true that good crops of one kind of vegetable have been raised on the same ground without any apparent diminution of their produce, yet it is more safe to change the variety every second year. Different plants draw different kinds of nourishment from the soil, and when one particular element of a vegetable is removed from the soil, that vegetable can not be grown there again without restoring that particular element of nourishment. Tap-rooted vegetables should be succeeded by those of a fibrous character, and *vice versa*.

SOWING SEEDS.—This, too, is perhaps the most important operation of the gardener. The proper time for sowing, either in the garden or on the field, is when the soil has just been turned up and thoroughly pulverized. Dry weather is to be preferred. If seeds are sown when the ground is wet, they are longer in coming up; the soil packs, and the sun bakes the surface so hard that the young shoot can scarcely penetrate it. We prefer to sow seeds when the soil is light and dry, and when there is a prospect of a shower. A seed to germinate quickly requires heat, air, and moisture. Soaking seed in dry weather will help them to germinate much quicker. A weak solution of guano water, or simply warm water, is all that is necessary. Peas, beans, beets, onions, and corn may be soaked fifteen or twenty minutes with good results.

The manner of sowing seeds depends upon the kind of seed. We favor sowing seed pretty thickly. It is quite common to sow peas three or four inches apart, and as a result few plants and few peas. Our method is to sow in rows three feet apart, and quite thick in the rows.

In sowing carrots, beets, parsnips, or onions, sow thickly; for it is easier to thin out than to transplant. Use the hoe frequently, keep the soil loose, and you will have good crops.

FORCING VEGETABLES is quite in its infancy as yet in this country. The chief trouble is the expense attending it, as it requires hot-beds and an unlimited supply of unfermented manure, as well as time and some little experience. In forming a hot-bed, choose a southerly aspect, if possible, for the frame. The manure should be placed in a conical heap for a few days, to allow the violent heat to escape; then form it into a square heap about eighteen inches high; tramp it well so there will be no danger of its settling when the frame is put on; cover the manure with about four inches of soil; after a day or two it will be ready to sow seed in. Lettuce can be raised fit for use in ten days in this way; cress and mustard, in five or six days.

THE GENERAL MANAGEMENT OF HOT-BEDS is simply to keep the sash covered at night or during severe weather with boards or straw, and admit as much light and air as possible

on fine days. When the heat declines, it may be renewed by removing a portion of the manure from the sides of the frame and replacing with fresh. Quite a number of vegetables can be grown in hot-beds. Cucumbers can be forced very early, and are much better than when grown in the open air; most gardeners prefer old seed for sowing, as they are apt to run more to vine when the seed is fresh. Rhubarb and asparagus may be forced as early as lettuce, by covering the beds with four or five inches of sawdust or spent tan, on top of which warm and unfermented manure is placed; the whole is then covered with boards to keep off the rain. Asparagus grown in this manner is tender and perfectly blanched; rhubarb is not so tart as when grown in the open air. A cheaper method of forcing rhubarb is to place a half-barrel over the plant, covering the whole with manure.

THE CHOICE OF VEGETABLES for a kitchen garden is a matter of taste. Some can not bear to see, much less eat, cabbage. One of our neighbors to whom we once gave some cauliflower said he thought they were the most tasteless vegetable he ever ate. We prefer the cauliflower, that is, for eating. The cauliflower likes a rich, fresh soil; it can scarcely be too rich; it can not be grown successfully on the same ground for more than two seasons; the proper time for sowing the seed, for the early crop, is about the 15th of September, and for the late crop, the 1st of April: varieties, for early use, the Early Paris; for general use, Hovey's Early American. Carrots require a very rich, deep soil, well pulverized, so that the roots will meet with no obstructions: the Early French Short-Horn is one of the best for forcing, and is of fine flavor; Long Orange for late crop. Celery is one of the most popular of the culinary vegetables; the seed is sown in a hot-bed in March, or in the open ground the 1st of April; when the plants are a few inches high, they will need transplanting, about three inches apart, where they are to remain until July. Trenches for growing celery are made by digging out the soil to the depth of fifteen inches, in which well-rotted manure is placed; if very fresh manure is used, the celery will be rank and pithy; as the plants grow, the earth is drawn up by degrees until the leaves are reached, which completes the operation of blanching: varieties—White Solid, for early use; Turner's Incomparable Dwarf White, one of the best keeping varieties; Laing's Mammoth Red, the largest variety in cultivation, and not liable to run to seed the first season. The culture of cucumbers in the open air is so simple that it is not necessary to give any directions; there are a considerable number of varieties: Early Russian is one of the earliest in cultivation, fruit from three to four inches in length, is ten days earlier than the Early Cluster, and a very desirable variety; Early Frame, an old variety, but a very good one, later than the above; White Spine, a standard late variety. Egg-plant, or Guinea squash, as it is called in Africa: this vegetable is getting more popular every year; it is of very easy culture; sow in the hot-bed about the 1st of March when the plants come up and form the second leaf, transplant them to another hot-bed; to grow them successfully the temperature of the frame should be about 60°: varieties—Early Purple and New-York Improved Purple; the scarlet kinds are only fit for ornament. Kohl Rabi, or turnip-rooted cabbage: this is one of the curiosities of the vegetable kingdom; it seems to be a cross between the turnip and cabbage, the leaves resembling the cabbage and the root a turnip; when young, it is very tender and of a delicate flavor; the best is the Early White Vienna; cultivate the same as cabbage. Lettuce: Early Curled Silesia is the best for forcing and for early sowing in the garden; Royal Summer Cabbage for the second crop. Lettuce requires a very rich soil; its crispness and tenderness depend, in a great measure, on the luxuriance of its growth. Okra or Gombo is another vegetable that should be more extensively cultivated than it is; the seed-pods when young are used in soups, and are also cooked as asparagus; the only varieties in cultivation are the Long Green and Improved Dwarf Green; the seeds are sown thinly in drills, about two and a half feet apart; hoe the same as bush beans. The best early pea is Hovey's Extra Early, and the best late one is Champion of England; Prussian Blue is an old established variety and worthy of cultivation; Bishop's Dwarf Long Pod, early and very prolific; Drew's New Dwarf grows only one foot high, and requires no stakes, is medium in earliness, and very productive. Peas like a very rich soil and good cultivation; they can be sown in the latter part of March, if the frost is out of the ground; a slight freezing in the ground does not injure them. Spinach is a rank

feeder, and unless the soil is very rich it will not be worth cultivating; for early use sow in March, and every ten days for a succession: varieties—Round Leaf or Summer, for early use; Prickly, for fall and winter; the New-Zealand is a good kind for summer use, as it does not run to seed as soon as the other varieties. Tomatoes: sow the seed in the hot-bed the 1st of March; in April, transplant into cold frames: varieties—Large Smooth Red, one of the best for general cultivation; Feejee, one of the solid kinds, containing but few seeds; Cook's Favorite, color deep crimson, good flavor, and very productive; Tilden's Seedling, dwarf habit, peculiar foliage, early and productive. A new white variety has been introduced, similar to the Smooth Red, curious on account of its color, or rather its want of color. It was formerly thought that the tomato did better when grown in poor soil; this is a mistaken notion; the better the soil the finer the fruit. The best early squash is the Early Bush Scallop; for summer use the Bush Crookneck and Boston Marrow, and for winter the Hubbard. Cabbage: the new varieties are the little Pixie, heads small and tender; Stone Mason, said to be tender and early; the Wakefield is the best for early cultivation, heads larger than the Early York; sow early in March for first crop.

Annual Flowers.

BY WALTER ELDER, PHILADELPHIA.

THE Annuals are more generally grown than the other classes of flowers; the species and varieties are now so multitudinous, and their beauties and habits so manifold, that they are well adapted for every purpose of ornamentation, and adorn alike the yard of the cot and the garden of the palace. By an all-wise ordination, the various genera bloom at different times, and follow each other in regular progression with profusions of flowers of every color and hue, from the opening of spring to the closing of autumn. The extraordinary improvements which the new varieties show over their original species far surpass the fondest anticipations and keenest conceptions of man. From species of single corolla, with colors uncomely and dim, varieties have been produced with flowers more double than dahlia and rose, and with colors and variegation of colors of the most dazzling brilliancy; and which retain their beauties three times as long as the ordinary species. Observe the difference between single Queen Margarets and their progeny, the double German asters; or, to bring the case nearer to ourselves, compare the wild lady-slipper, which grows up at our road-sides, with its offspring, the double-balsam, which adds such splendor to the royal and public gardens around Paris, where it is titled "Fleur de la Reine d'Amerique."

Some species are dwarf creepers, others grow stately and erect; some are climbing vines that ornament our lattice-works with foliage and florescence of great beauty; some are admirable for their profusions of blossoms, others for their sweet odors. Some thrive best in sunshine, others in partial shade; some bloom only in the morning, others only in the evening, and are closed through the heat of the day; while others only expand their blooms when the sunshine is upon them. Anagallis grow two inches high only; sunflowers grow ten feet tall, and convolvulus major climbs forty feet high. Some bloom best in the cool of spring and autumn, others only in the heat of summer. The seasons and modes of sowing are also various, yet all their seeds are planted of such depths as to accord with their sizes. For example: lupin and sweet-pea seeds are planted two inches deep; poppy and portulaca seeds are sown upon the surface and lightly pressed into the soil; in all cases the soil should be enriched and well pulverized, to insure success in germination of the seeds. The concentrated fertilizers are especially beneficial in making a profusion of blossoms.

Class 1st.—Caliopsis, silene (or catchfly), eschscholtzia, rocket larkspur, pansy, etc., bloom earlier and better if sown in fall; they are all quite hardy.

Class 2d.—Anagallis, Adonis, alyssum, cacalia, Clarkia, candytuft, Grove's love,

Drummond phlox, mignonette, portulaca, etc., being of dwarf growth, are sown in patches; when mixed with others, scratch hollows ten inches wide and sow the seed in them; then cover up and press gently down, and make a small rut around; then write the names upon wooden labels, and stick them in the middle of the patches.

Class 3d.—Branching larkspur, gillia, collinsia, nigella, poppy, sweet-pea, ipomopsis, and others of like growths, are sown in rings or round ruts a foot in diameter. The label is stuck in the circle, and when the plants grow large, a stake or fancy frame is stuck in the circle, and the plants are neatly tied to them as supports and show their blossoms to greater advantage, and have a neat appearance.

Class 4th.—Aster, centaurea, chrysanthemum, marigolds, marvel of Peru, gaillardia, prince's feather, love-lies-bleeding, euphorbia variegata, etc., are sown in rows on a warm border and transplanted singly when large enough.

Class 5th.—Balsam, browallia, ageratum, cockscomb, gillyflower, (ten weeks' stocks,) gomphrena, ice-plant, sensitive-plant, zinnia, maurandia, thunbergia, and the improved nasturtiums, all bloom earlier, longer, and more profusely when sown in cold frames with glass sash and kept very warm until the plants have four leaves; and when large enough, and the soil and weather get warm, they are transplanted singly, except maurandia, thunbergia, nasturtiums, ice-plant, and sensitive-plant. All the others of this class, and those of the 4th class, should always be transplanted singly; the exceptions should be transplanted in bunches with a trowel.

Class 6th.—Morning-glory, cypress-vine, hyacinth bean, scarlet-runner bean, gourds, etc., being all hardy climbing vines, flourish best when the seeds are sown where the plants are to grow. [The seed-shells of cypress-vine and gomphrena (globe amaranthus) are very hard, and should be soaked in warm water, say, blood-heat, for twenty-four hours before sowing.]

The beauties of gardens and parterres are greatly enhanced when the genera of upright growths are neatly tied up to stakes or frames, and there are now large manufactories for making tasteful frames of galvanized wire for supports of flowering plants, and also lattice-work; they are of many forms and sizes, and very ornamental.

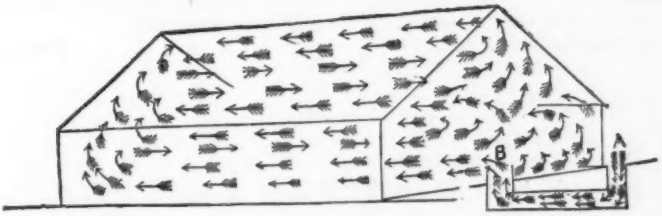
It is also important to arrange the various species in a way that will make a pleasing contrast of the sizes of plants and colors of blooms, but the inexperienced can not know how to arrange them without information. The seed catalogues should have abbreviations of the sizes and habits of all species and varieties, the colors of flowers and their times of blooming. People would then purchase and plant more knowingly, and many more flowers would be grown.

I can not too highly applaud the energies and intellectual endowments which our younger class of seedsmen and florists have brought into play to promote their business and increase a love for gardening, by giving in their annual catalogues fine illustrations and descriptions of new varieties of flowers. In this way all the various departments have risen to a higher standard, and a greater animation has been infused into horticultural science and practice.

Ventilation of Green-Houses and Graperies.

WE propose to speak of ventilation in a horticultural sense, and that branch of it pertaining to glass structures. The majority of such buildings are constructed for the growth of either flowers or fruits during the winter months of the year, and most persons in the management of these structures know how difficult it is to properly ventilate a house during the inclemency of severe winter. The most critical department to manage during the season in question is, perhaps, an early house of grapes. It is similar to a noble bark with all her sails unfurled, riding beautifully over the blue waves of the fathomless deep, with all on board still and calm, musing, perchance, on the serenity of the scene, and of the vast eternity of ethereal matter dissolving in the far distance from the human vision; when lo! vivid, lurid lightning, and a thunder-clap, in an instant burst on the crew and startle them from their reverie. Instantly the ringing

voice of the commander is heard pressing and driving through the howling storm, "Reef sail, 'bout ship!" With daring courage he is obeyed. They stand and watch, and tremble at the awful tempest! Will she go down? this is the momentous thought. Wind and wave have raged, but the noble bark has lived through it. Many times, friend Editor, has your humble servant determined that this should be the last voyage he would ever again take, but the old captain loves the sea and most likely will die on it. Having passed through many a rough ordeal to bring ripe grapes into New-York market by the months of March and April, and having to contend with the present system of ventilation—that is, opening ventilators on the top of the house—it is not only troublesome, owing to driving winds, etc., but we lose through such openings the very atmosphere that has cost so much labor and expense in preparing as the proper food-element on which the vines or other plants to a great extent exist. Reducing the temperature of a house in this manner is nothing more than letting out all the warm, moist air to be replaced with cold. Now, if we could properly ventilate a house that shall be made glass-tight, or without opening any ventilators either in the sides or on the roof of a house, we should, we think, achieve a point worth something, and a matter of invention which, no doubt, some of those devotees to patents in horticultural products would run to Washington with to secure to their own very private interests. We wish such horticultural patentees all the success they can achieve by patents on their flowers and fruits and it won't be long before we shall see them claiming patentsfor a pecuiar style of



knot by which a plant is fastened to a stake! But we will leave for the present the idea of "patents" on the product of the soil in the form of apples and pears, plums and squashes, cherries and turnips, Rose potatoes and Vitis Labrusca grapes hybridized with vinifera of the order of Hamburg, Chasselas, Muscat, etc. How delicious must a native grape be after working into its name a little of the foreign element! It conveys to the mind such an idea of lusciousness that a "Taylor's Bullet" or a "Charter Oak" would be passed ravenously into the stomach without even a *smell* being had. This subject, however, does not require to be ventilated; but I will now show your readers how a glass structure may be ventilated without openings in the house in the ordinary way. A glance at the annexed cut will convey the idea and principle. It will be seen that a cold-air drain is cut on the outside of the house, at A; should be about three feet below the surface of the ground, and the opening of this drain should be carried about four yards from the end of the house, and the size of the drain twelve or fifteen inches square. The object in sinking the drain is to carry it below the penetrating frost, as the cold air in passing through *unfrozen* ground becomes warm in its transit. The other end of the air-drain opens at any convenient place immediately at the *inside* of the house, as at B. Any common arrangement, such as a board, will answer the purpose of a register, which should be fitted to both openings of the air-drain, in order to control the action of the current of admitted air or to close it up when not required. It will be found by the use of a thermometer that several degrees of difference exist between the air entering the drain at the outside of the house and at the opening on the inside of the house. This, of course, is warmed in passing through the ground. Now, if, when such drain is being formed, five or six small wire-meshes, attached to wooden frames and of a size to fit the square of the drain, be therein placed equidistant, the cold air in passing through them will still be raised several degrees in its temperature. Why this

is so, we should feel much pleased if some of our young gardeners who are posted in natural philosophy would explain; so the *why* and *wherefore* of this singular effect given to the cold air by the use of merely five or six small sieves, as gardeners will call them, we will leave for the young folks to ponder over. The cold air, on entering a tight house, will put in motion the whole heated atmosphere, and in the manner as indicated by the arrows in the cut. We do not give this to be read as an exhibition of the science of *theory*. We have tested the matter, and therefore call it a *practical fact* in ventilation. Any person who will put it to a test will find the air circulating just as indicated by the arrows. There is no *theory* about this part of the question either; for, if you stand in the house when the cold air is first admitted, the cold air can be seen rolling along the floor of the house, in what looks very much like a flat cloud of steam, when the stratum of warm or hot air just above it is seen to unite, and the cloud of steam, as we will call it, rises a little higher up, after reaching the end of the house, and so continues this very pretty circulation so long as the cold air is admitted. Now, is not this just as it ought to be? We avoid all draught and cold streams of icy air through ventilators, and govern our wants and necessities *down under our feet*. But it must be borne in mind that we must not run wild on this subject; for it is only a *convenience* for a certain period of time. For when the *external* atmosphere gets by solar heat to that degree we maintain in a plant structure, our system of circulation, as previously explained, will cease to work; but so long as a difference exists between the atmosphere of a plant-house and that of the outside, it will work satisfactorily. As the winter season is the period when these great extremes exist, it is also the time of difficulty with opening ventilators, but the best working period for the plan here suggested.

WHITE PLAINS, N. Y. JOHN ELLIS.

The Dianthus Family.

BY WILLIAM H. LYMAN, LEVERETT, MASS.

YEAR after year produces some new variety of this beautiful and justly esteemed class of plants; although they have been known for centuries, still they preserve their beauty and novelty. This class of plants was originally a native of Africa, although some claim it to have originated under Italia's fair sky. It was introduced into Spain in the time of Augustus Cæsar, its true origin not being generally known. Shaw, an English poet, who considered it a native of Italy, alludes to it in the following lines:

"In fair Italia's bosom born
Dianthus spreads his fringed ray,
And, glowing 'mid the purple morn,
Adds fragrance to the new-born day.

"Oft by some mouldering time-worn tower
Or classic stream he loves to rove,
Where dancing nymphs and satyrs blithe
Once listened to the notes of love.

"Sweet flower, beneath thy natal sky
No fav'ring smiles thy scents invite;
To Britain's worthier regions fly,
And paint her meadows with delight."

The Dianthus when first discovered had only from four to five petals, the colors being only red and white, emitting a fragrant odor, but cultivation has altered the shades and doubled the petals, so that we now have them fringed; large and globular; striped and variously spotted. Many varieties are in general cultivation. Some of the most prominent I will name.

In this class we have the well-known Carnation, and Picotee Pink, and Sweet-William, which need no description, being so familiar with us all. Dianthus Chinensis is a hardy biennial of great beauty; blooms the first season from seed. The colors are

Dianthus Heddewigii Diadematus fl. pl.

rich crimson, often approaching to blackish purple, which are often edged with white, pink, and other colors; growing about twelve or fifteen inches high. The flowers are perfectly double.

Dianthus Chinensis Heddewigii. This is comparatively a new variety, growing about a foot high and very bushy. Sometimes as many as thirty or forty flowers are at once in blossom. The flowers are very large, from two to three inches in diameter, and of great beauty; for variety and brilliancy of color no other pink excells it; the predominating colors are, white mottled with rose, purplish red with dark centre, velvety carmine crimson, dark blood-red mottled and shaded with maroon, and velvety black; flowers well from seed the first season—flowers double and single.

Dianthus Chinensis laciniatus. A beautiful fringed or cut variety with pure white, flesh, rose, various shades of red, carmine, violet, purple, and rich maroon; some being selfi, others striped and spotted; both double and single flowers.

Dianthus Heddewigii diadematus fl.pl. (*Double Diadem Pink.*)—This pink is entirely new to this country and is one of the many new varieties of flowers which are being brought before the public annually. The engraving represents three distinct varieties. Not having grown this plant, I am unable to give a minute description of it, but am indebted to the grower for the following description. He says: "It differs from Dianthus Heddewigii by its more luxuriant, compact and dwarf growth, by its leaves, but, before all, by its flowers, which have a diameter of from two to three inches each. The flowers are very regular and densely double, and pass all tints from lilac, crimson, and purple to the deepest black-purple, having very often a velvet-like radiant fire, impossible to be reproduced by the brush of any artist. Each petal is a marvel of beauty in its drawing. The principal and nearly immutable characteristic of them are two mirrors, with more or less distinct outlines, intensely colored, with brighter border or inverse. These mirrors are surrounded by a colored zone, but the toothed border of the petal is nearly always white, or only lightly colored. The flowers are so fine that it is too difficult to describe them."

The grower has tried to intimate their beauty by the name of "Diadem Pink." Pinks should never be suffered to remain longer than two years in the ground without either change of soil or situation. They never flower so well when transplanted in the spring; September and October being the proper time to transplant. If you wish to excel in a fine bloom, a top dressing of night-soil or sugar-baker's scum should be applied in the spring.

A New Grape—The Cunningham.

SEVERAL horticulturists in the West have called attention to this new grape as worthy of general interest.

It belongs to the same class as the Herbemont, Lenoir, and others peculiar to the Southern States. The following is a correct description:

Bunch compact and heavy, medium, shouldered; berry small, brownish black, juicy and vinous, free from disease; vine is a strong grower, healthy, but requires slight Winter protection. Is especially adapted to our Southern hillsides, seeming to love a light limestone soil; ripens its fruit late, but makes a most aromatic and delightful wine, resembling some of the finest Hungarian wines; specific gravity of must, from 90° to 112°, according to the season.

The editor of the *Grape Culturist*, St. Louis, states that he has had an acquaintance of over twelve years with this variety, and he is able to speak in its favor, and recommends it for general trial in Southern locations and on limestone soils.

The Cunningham Grape.

Design for a Flower-Garden.

UPON the opposite page, we present a design for a flower-garden, which has the merit of a beautiful simplicity, and yet affords the opportunity of an exhibition of choice taste.

The old-fashioned style of flower-gardening, that of devoting a part of the vegetable-garden, the sides of the paths, or to cut out here and there little squares and triangles of earth and edged with a little box, is by no means the best or most pleasing.

Modern taste prescribes a beautiful lawn in front of or around the mansion, and then to cut here and there on its surface little fancy figures and shapes of earth, and drop in them the precious seeds or roots which are to give so much pleasure by their beauty of form, foliage, and flower.

By reference to the plan here given, it will be seen that a judicious blending of the beauty of the lawn and the flowers planted on its surface is given, while the choice of shrubs, flowers, or bulbs to be planted will give an infinite range for agreeable variety.

If the grounds are large enough, there can be two of this size, one on each side of the house, and planted in different flowers, or even, if there is space enough, the same may be placed between the house and the street.

It is also admirably adapted for a parterre raised one or two feet above the surface of the surrounding ground, and the edge marked with a neat sloping bank of turf.

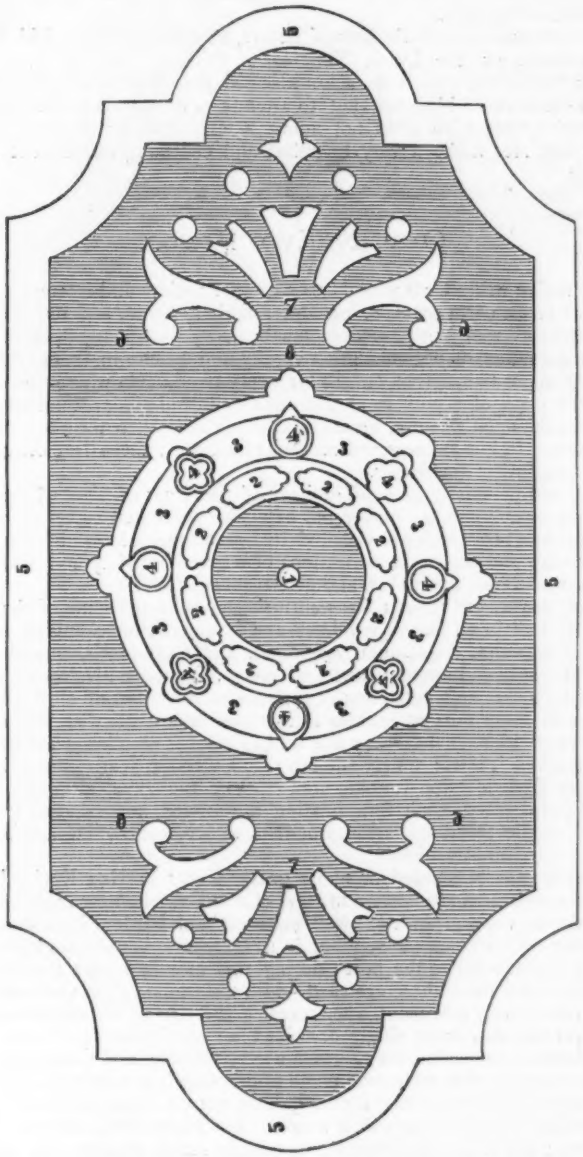
City farmers, who have an extra lot or two wherein they would like to spend a little time in making a miniature paradise of natural beauty, will find this form very suitable, as it can be carried out within the limited area of 50 by 100 feet, and on the outer edges of the walk close to the house or the fence there is room to train a large number of climbing-plants. A tasteful hand will produce from this arrangement a lovely spot which will be admitted the admiration of the entire neighborhood.

We present below several plans in which this design can be carried out: 1 is a grass-plot, surrounded by a curb of stone, with a vase in the centre; 2 are little beds, edged with box, located on the gravel-walk, to be planted with flowers or shrubs; 3 are beds edged with box; 4 are beds a little elevated, with stone curbs, also to be planted in flowers or shrubs; 5 are gravel-walks; 6 is a lawn surrounding the interior beds; 7 is a collection of beds at each end, cut out of the lawn, and either planted in showy bedding-plants or low-growing flowering-shrubs.

An agreeable choice of plants may be made as follows: 1. Place in the vase a number of brilliant Coleus Verschaffeltii; 2. Mountain of Snow Geranium; 3. Let this remain in grass; 4. Mrs. Pollock Geranium; 7. Plant blue Lobelias in masses.

Or another plan; 1. Instead of the vase, put Amarantus Sanguineus; 2 Salvia Gordoni; 3. Dactylis Glomerata Variegata; 4. Zonal Geranium, incomparable; 7. Verbenas.

Still another plan: 1. In the vase put Achyranthus Verschaffeltii; 2. Ornamental grasses of tall growth and silvery or yellow foliage; 3. Tropæolum, Star of Fire, or Mrs. Pollock Geranium; 4. Gladiolus; 7. Parrot tulips.



DESIGN FOR A FLOWER-GARDEN.

Another good plan would be to have no flowers at all, but to take away the vase, put in its place some Pampas grass; at 2, Cannas; and at 3, 4, and 7, ornamental grasses of striking habits of growth.

We might continue through the lists of Asters, Poppies, Petunias, Phlox, Portulacas, and other annuals, or the Lilies, Tuberoses, Peonies, Dahlias, and Roses, and make endless variations. It is an acknowledged principle in ornamental gardening, as well as in mercantile business, not to attempt to crowd too much together, but to do a little *well*. This plan does not admit a large *number* of varieties of flowers at one time, but *does* make a very beautiful and charming effect from the *few* that are used.

Our Native Ferns.

FEW of our native wild plants present us a greater variety and interest than our beautiful native ferns, of the woods, lowlands, shaded valleys, and our native hills and pastures. Every one who has walked in our secluded woodlands, with his eyes open, can scarcely have failed of noticing great variety and beauty in these striking forms of vegetation, that show themselves on almost every hand. Go where we will, some one or more of this class of plants is almost sure to intrude its graceful beauty upon the vision; some in the open pasture, by the roadside, clinging to the face of huge rocks, and others growing in low swamps and shaded situations; these last offering the most pleasing and interesting specimens.

The beauty and peculiarly graceful outlines of this class of plants have made them favorites with many cultivators; and in our extensive green-houses are found collections of foreign ferns, most of which are excelled in beauty and interest by our native ones. With the same care and attention, collections of a greater variety and interest might be made from our woodlands and fields, and grown successfully.

For autumn leaves, the various ferns furnish the collector some of the finest specimens to be had, rich in all the varied hues and colors of the changing season. The Polypodium, Woodardia, Asplenium, Aspidium, and Cystopteris, furnish us some of the most rich and splendid autumn tints and colors, in their native localities; these all are sought for by lovers and collectors of autumn leaves. But of all the ferns that our woodlands furnish none present greater attractions, or are more eagerly sought for by the collector, when to be found, than the trailing fern, *Lygodium palmatum*. Gray, in his manual, describes it thus: "Very smooth; stalk slender, flexile, and twining; one to three feet long, from slender running root-stocks; the short alternate branches or petioles deeply two-forked, each fork bearing a rounded heart-shaped palmately four to seven lobed sterile frondlet; fertile frondlets above, contracted and several times forked, forming a terminal panicle."

This variety is rare, in shaded or moist grassy places in New-England, and southward along the coast, or near; flowers in July. Collectors often err in gathering this too early, before the leaves and fruit are well matured and hardened, so that they do not retain their color at the best. September is as early as it is well to gather, if we wish it to retain its green color to the best; during this month, before the frosts, its long panicles of fruit—after frosts these are shed—with the trailing stem and slender petioled leaves form a most lovely ornament, after pressing and drying, for churches and parlors, etc. Made into wreaths, hung singly or twined about pictures, and other wall ornaments, or windows and curtains, they furnish a very pleasing and ornamental effect.

The quickest and least troublesome mode of pressing it is with a hot sad-iron, pressing each leaf separately; smoothing it over quickly not to scorch or burn. By coloring, or varnishing with transparent varnish, it may be kept a long time, and retain its original color and beauty; but unless so treated it gradually fades, after hanging awhile, and at the end of a year has quite a light brown appearance.

There are quite a number of other varieties of fern which it will well repay the student of nature to gather and study, as they furnish a very instructive and interesting study.

W. H .W.

Practical Hints for the Garden and Grounds, in April.

April brings with it its duties and labors, and in usual seasons work in the garden and grounds must be begun in earnest, to be continued till winter drives us indoors again.

He who would enjoy the greatest profit from his garden must make a right beginning. In planting seeds he must make a discrimination, and not treat all alike. Hardy, and tender plants, require to have their seeds planted at different dates, or at least hardy ones will bear to be planted earlier than those less hardy, or tender.

Seeds of such vegetables as the beet, carrot, celery, cress, cabbage tribe, lettuce, parsley, parsnips, onions, radish, peas, turnips and spinach, may be safely planted in the open ground during the month of April; but all less hardy had better, in this latitude, be left till May, as the seed is apt to rot in the ground before germination is completed.

It would be well for the gardener to make himself familiar with the laws of temperature governing the germination of the different varieties of vegetable seeds he has to deal with, before venturing too far in planting, etc. All kinds of seeds will not germinate at the same temperature, neither will all plants grow alike at any given temperature, especially a low one; so that in out-door culture we must always be governed by the season and temperature of the air and soil.

In early open air planting, we should always choose the warmest location, dryest and warmest soil: when a choice is to be had, a soil of leaf mould, sand and loam, is the best; but when such is not to be had, additions should be made such as will tend to lighten the soil, give it a dark color and porosity, so it may absorb and retain the heat.

All seeds germinate and grow more readily in a light warm soil than in a heavy one—by lightness we mean a mellow or loose soil; heavy, one which compacts quantity in a given space, although there is the same difference in the capacity of seeds pushing their plumules up through the soil as there is in their different requirements of temperature in germinating.

The hot-beds and cold-frames must be well tended to this month; they require much air, partial shading in bright sunny days, covering at night, and a sufficiency of water to promote rapid vegetation, without injury from too great concentration of the sun's rays. Hot-beds, particularly, need close attention this month, as an hour or two of neglect will often destroy the whole labor and expense already expended upon them. Often a few moments, in the middle of the day, with a bright sun, will scorch and destroy the tender plants you have been caring for so many weeks; and perhaps such a day may be followed by a stinging frost at night, which, if not protected by shutters or mats, will make short work with the plants in the hot-beds.

For the benefit of the inexperienced, we will here give directions for the proper care of the hot-bed, for a single day, which can be followed out daily. Remove the mats, or other covering of the beds as soon in the morning as the sun's rays strike the bed, unless the weather is severe. Again, about 9 A.M., if the sun shines bright and it is warm, visit the beds again; and if the heat is rising in the beds to near, or about 80°, raise the sash a little, and as the heat rises during the forenoon give more air. After the sun begins to decline, about the middle of the afternoon, water the beds with tepid water.

The watering completed, put down the sash close; and when the sun's rays get off the plants, cover for the night with mats or shutters. In mild cloudy weather, very little attention is required except to let off steam and protect suitably at night.

While hot-bed plants should never want for moisture, they should never have too much, as in cloudy weather dampness engenders mildew and decay. As the plants increase in size watchfulness must increase, air must be more freely admitted; weeding is in order at all times, when a weed is to be seen, and encouraging the plants to grow and harden off as fast as is consistent with a healthy growth.

Beds for radishes may be made in the warmest exposure and soil, and the seed sown; but unless you have a good warm rich soil and exposure, there is little use in sowing the seed in the open air till quite the last of the month, as the radish, to be tender and good, must have a quick and rapid growth. Radish seed may be sown among transplanted cabbage and lettuce plants, or the cabbage and lettuce plants from the cold-frame and hot-bed may be set between the rows of radish seed sown, as soon as the weather will permit.

Sow peas, for succession, once in two weeks, planting in drills—the dwarfs in single drills, and the larger sorts in double drills convenient for setting the bushes between; about ten inches space will answer for the brush.

Plowing, digging, and manuring the garden will comprise the greatest part of the labor that can be advantageously done in the open garden, aside from planting a few very early vegetables as here indicated.

During the month, as the weather promises, a few cucumbers, squash, beans, and corn may be started on sods in the hot-bed; cut square pieces, one and a half inches square, and stick one or two seeds in each and bury them, grass down, in the hot-bed soil. These will be somewhat earlier than if we waited to plant in the open ground, if carefully transplanted after the weather becomes settled and warm.

Sow in the hot-bed or cold-frame, seeds of tomato, pepper, egg-plant, and cabbage, if not done before.

Prepare beds, and sow with onion seed, as soon as the soil will admit. Sow in drills one foot apart, covering the seed by sifting a little fine soil over and rolling the surface. The onion will usually do the best when planted on the same ground several successive seasons, if properly treated: they require a rich, mellow soil, free from weeds or seeds.

About the middle of the month, plant out your sweet potatoes for growing—plants or slips. Have a hot-bed prepared, the manure and heating material fifteen inches deep, and covered with two inches of sand and leaf-mold, mixed, or clear sand will do, if inconvenient to obtain the leaf-mould. When the heat has risen and begins to subside, place your tubers thickly over the bed; and when the eyes begin to show signs of starting, cover the potatoes one inch with your sand or compost, and give them the same treatment you give other tender plants in the hot-bed, and by the first of June the slips will be in prime condition for drawing and setting.

Provide an ample supply of seed, good and fresh, in variety, if not already done. Do not buy seeds because they are cheap in price; for the best are the cheapest at any price, and no economical cultivator can afford to purchase any other; for if the seed is poor, the expense and labor of plowing, etc., are lost.

Set out onions, parsnips, carrots, beets, and turnips, for growing seed for future purposes; give them good generous soil, and a location where they will receive the attention they need, not to be injured or wasted when ripening. Different varieties of the same family of plants for seed should not be set near each other, or they will mix and deteriorate.

Rotation of crops in the garden is as essential as in growing field crops; this can be accomplished with a little care in planning, in not following in the same spot plants of the same family as last grown. However, very much of this necessity for rotation may be obviated by substituting deep, thorough culture, trenching, and heavy manuring.

ORCHARD AND NURSERY.

Spread and dig in manure in the orchard, giving the whole surface covered by the branches a good dressing. Wood-ashes, lime, soda, salt, and potash all are excellent fertilizers to apply to an orchard as surface applications. See that the fences about the orchard and nursery are all in complete order; for often "a stitch in time will save nine" trees, shrubs, etc., from the browsing of stray cattle.

Soon as the leaves begin to start, and often before, the caterpillars will begin to build their nests, if any clusters of eggs have been overlooked. The nests will be seen, very small fine webs, at first, in the forks of the trees and branches. Provide yourself with a fishing-rod and piece of sponge and a vessel of strong solution of soap in water, and when you see a nest, wipe it out, dip your sponge in the soapsuds and wash out the place where the nest was, and several inches above and below; do this early in the morning, before the worms get started out.

Encourage insectiverous birds to nest and occupy the orchard, to aid in destroying insects, etc. Allow no prowling gunners to come into the orchard or grounds to shoot or frighten off the birds, for they do you a greater good than they do you injury from their pilferings.

If new plantings are to be made this spring, prepare the ground at once, if not done before, and plant out apple-trees, forty feet apart, in quincunx order. Plow deep and subsoil, working in decomposed manure freely. Make the

holes large, extending a foot or more on all sides beyond the spread roots; spread the roots well and carefully, fill in the soil close around, pressing firm, so that when the tree is set it will feel firm when taken hold of.

Seeds, pits, and nuts of fruit and forest trees, shrubs, etc., which have been kept in boxes of earth during winter, may be planted as soon as the ground can be prepared.

Finish digging trees from the nursery and heel them in, if not to be immediately reset. Manure, transplant, and fill out vacancies, and clean out all rubbish, ready for other work in the nursery.

Graft with some valuable sort those trees which bore poor and undesirable fruit last year. If you never tried your hand at grafting, observe some experienced grafter, and then try on the branches of some tree that it will not injure, provided the cion does not take.

FRUIT GARDEN.

In preparing new grounds for small fruits, the ground should be well drained, well manured, thoroughly and deeply worked with the plow or spade. And in selecting varieties for planting, it should be done with reference to whether the product is for market or for home use; often a very desirable fruit for family use is a very unsuitable one for marketing. While the Wilson's Albany strawberry is a very good carrying berry, and gets to market long distances in fine order, there are many other more desirable for family use. When we can get a berry with as many good qualities combined as the Wilson, and in addition, suitable sweetness, we shall have as near a perfect berry as any one need expect; and the man who shall succeed in producing it will secure a fortune as well as the gratitude of mankind.

Plant out cuttings of currants and gooseberries in well prepared, rich, mellow soil; see that the soil is compressed closely about the foot of the cuttings; for upon the thoroughness of this mainly depends the success of their taking root and growing. Try a few Cherry and La Versailles currants, if you can afford to give them the needed care and attention; otherwise, the old Red Dutch will stand the greater neglect, and yet do tolerably fair. Houghton's Mountain and American seedlings are among the best and most hardy of the gooseberries. The large English varieties are more liable to mildew and other accidents, and, except in good locations and very favorable seasons, a crop is almost a sure failure.

Raspberries may have their winter covering removed when there are signs of settled weather, and be tied up to the trellises or stakes. Cut off a few inches of the top of the canes, and give a liberal dressing of well decomposed compost manure, which should be carefully forked in around the roots. New plantings may be made, in deeply worked soil, in rows four feet apart, and three feet in the row. Clarke, Brinkle's Orange, and Mammoth Cluster are among the best sorts. Old vines should have the bearing canes of last year cut out.

Every fruit-garden should have some of the improved blackberries in it; and which are the best depends much upon the locality, soil, etc. Missouri Mammoth, Kittatinny, Early Wilson, and Sable Queen are among the best of the later sorts, hardy and productive. The Mammoth is one of the most gigantic of blackberries. The Sable Queen, sent out by J. W. Manning, Reading, Mass., excels in beauty, size, and fruitfulness the Dorchester and Lawton, and its endurance of the cold of our winters is unexcelled. Plantations in bearing should have trellises to tie the canes to. Wire stretched between strong, firm posts, six feet tall, above ground, makes a very enduring trellis. Use No. 9 or 10 wire, putting one piece two feet above the ground, and the others above it one foot apart. The canes should be secured to the wires with bass-matting or soft twine.

New beds may be made and planted to strawberries, making the soil rich and working it deep. For garden culture, make the beds four feet wide, with eighteen inch alleys; set three rows of plants on each bed, one row in the centre and the others eighteen inches away on either side, putting the plants one foot apart in the rows. Spread the roots well and plant deep, without covering or sinking the crowns below the surface.

FLOWER-GARDEN AND LAWN.

The snow-drops and crocusses are in blossom, while other bulbons and rooted flowers soon follow, and the flower-garden begins to assert its interest and importance. Violets and pansies begin to open their eyes to the spring sunshine in favored localities, and before the month closes the forsythia will be spangled with yellow flowers, snow-drops be replaced by crocusses, to be followed with daffodils, narcissuses, and the early hyacinth. Remove the covering of these bulbs carefully, a little at a time, till all are cleared off, so that the bulbs will harden gradually.

Sow seeds of such annuals as desired, which blossom late in the fall and need a long season in the hot-bed; cover lightly with fine soil, according to the size of the seed.

As the days come on warm and pleasant, the amateur gardener can hardly restrain his enthusiasm, and is very apt to be in a hurry to get his seeds planted, not reflecting that such bright weather is very apt to be followed yet by many cold nights and days, which will destroy all his bright anticipations and hopes of seeds deposited in the soil. Seeds, if planted too early, often rot in the ground; or, if they succeed in germinating, the tender plants meet death from a frosty air. We cannot, therefore, advise the planting of but few seeds in the open air, in this latitude, so early as the month of April. It is better to get every thing in readiness, over-

haul seeds on hand, all garden ornaments and tools that were packed away after being repaired, and decide what is to be added thereto, and at the first opportunity procure the same.

Shrubs may be planted out; and on the lawn, about the house and buildings, climbers add much to the beauty of a place, and often hide a deformity. Trained on fences, buildings, or trellises, they often add greatly to the effect. The Wisteria, Trumpet Honeysuckles, and Trumpet Creeper are among those grown for their flowers, and the Virginia creeper and Ivy for their foliage.

Thin, prune, transplant, and set out such shrubs as have been decided upon or are already in the grounds. Three very pretty and desirable sorts are, *Weigela rosea*, *Forsythia viridissimum*, *Cydonia Japonica*.

Deciduous trees, for ornament or shade, may be planted as soon as the ground is open or the frost is out, so that the trees can be well set.

Clean up and do up all neglected work about the flower-garden or lawn, against settled warm weather and a busy season.

Wisconsin State Horticultural Society.

The annual meeting of this society has just closed, and proven, I believe, one of profit and pleasure. The members convened in the rooms of the Agricultural Society—which, by the way, are among the best suit of rooms in the State—on Tuesday evening, the 9th inst., and were welcomed to the hospitalities of the City Horticultural Society, in an appropriate welcoming address by ex-Mayor W. T. Leitch, president of the society. Dr. Joseph Hebbins, president of the State Society, then read his annual address, which drew a pleasant picture of our true work from the Eden of our first parents to the humblest gardener in our midst. Told us what a true garden should be, showing that while it was the first business of mankind, it is still his last as well as the finishing touch of all arts. It was replete with practical and critical notes upon some of our best gardens, in treating that in his opinion there were few gardeners who understood the true meaning of a Horticultural painting, or how to embody nature and true art so as to make a pleasant effect. The president is a wide awake enthusiast on the subject of Horticulture. Grapes are his specialty, fruiting, and thoroughly testing about thirty sorts, and nearly as many raspberries, and this, too, on a single city lot. He urged upon the members the utility of a thorough exploration of the State, with a view of developing its horticultural resources.

Following the president's address was the Secretary's report, briefly rehearsing the labors of the past, which seemed to be satisfactory inasmuch as there had been good progress made in the condition of the society. The account of the labor performed upon the five acres of experimental garden showed a good beginning in a right direction: that although it was the first year of trial, and the ground was quite new and unsubdued, yet there had been a good degree of progress made, and he thought, and could see no reason, why it would not prove a success. The records show about 3000 plants, trees and shrubs now growing and under the care of the society, and hoped the number would be largely increased during the coming season, and expected there would be some valuable experiments with the small fruits during that time. He also urged the importance of legislative aid, that the society might be enabled to appoint committees for field labor—entomological and botanical—beside carrying on more effectually the work they had already commenced.

Following this, a lively discussion came up upon planting bearing-sized trees which had previously been transplanted in the nursery. Upon this there was a varied opinion, but generally at variance to the idea; and a large majority were of the opinion that good two year old apple-trees was much the best age, believing that in practice more fruit and very much better trees were got in a given time than by adopting the "old tree" system—some nurserymen even going so far as to say they would dig and burn all trees which remained on their hands at four years old. It was claimed that at two years old trees were removed with all the roots; at four or five they were necessarily much mangled in the process; and while the old tree was making up its loss in the root direction, the younger ones had none of this to contend with, and consequently lost no time, but grew right along as though nothing had happened.

A. G. Tuttle read an essay upon "Fruit culture on the timbered land," in which he claimed protection, the great point to keep in the foreground to ultimate success. He thought that water protection was very desirable; and though many thought fruit-growing here was a very precarious business, he did not look upon it as any more uncertain than wheat-growing, and far more profitable.

Mr. Plumb, for the prairies, advocated thorough drainage to the depth the tree roots go—planting in all cases upon high and cool locations. The society recommended the five best varieties for all locations Red Astrachan, Duchess of Oldenburgh, Fameuse, Tallman Sweet, and Golden Russet. These five met with universal support; and we might say that nine tenths of all the trees planted in this State and Minnesota, for several years, of western growth, except the crab-trees, have been of these sorts. Their reliability for perfect hardiness and bearing qualities have become fully established, and unless a larger variety is required, these are the trees sought. List of ten additional sorts were, Sops of Wine, Fall Stripe, (Saxton) St. Lawrence, Perry Russet, Red Romanite, Willow Twig, Blue Pearmain, Plumb's

Cider, Fall Orange, Yellow Bellflower, and Seeknofurther. Some of these are nearly equal to any in the first list, but less known.

Hislop and Transcendent crops were recommended for general culture. Essay on strawberries and their culture, by Mr. Kellogg, followed by discussions brought out the expression that we had quite too many sorts; and the disposition to confine ourselves to but a very few in the future, and those only of the hardy, vigorous and best bearing sorts was earnestly expressed by every one. The Wilson stands at the head of the list for general cultivation and market. Agriculturist was warmly applauded by the few, evidencing no progress in popularity.

The grape question was canvassed with much interest after the reading of an essay by Mr. Greenman on the subject; Concord for the masses and Delaware almost equal. Rogers's Nos. 3, 4, and 19 were thought well of, had the good qualities in growth of the Concord, and after keeping awhile, as good as the Delaware. The Janesville was spoken well of, and recommended for trial. This is a seedling which received the first premium in 1868, after three successive years on the exhibition tables of the society, as a seedling grape. The grape enterprise in this State is becoming one of magnitude, and many are looking for the best list of sorts for wine as well as table use. Creveling is giving good satisfaction.

Pears received but little encouragement. Flemish Beauty is the only variety that can be planted with any certainty, and even this is not always to be relied upon; for during the last year or two, many trees of this sort have gone the way of all the world. In the interior of the State, the climate is so dry, unprotected and naught to check the dry currents of wind which is always in motion upon the prairie, combined with many other causes of blight and insects, have made the pear-growing almost a seeming failure. Along the lake shore, in the eastern part of the State, it is a little better, but even there it is not encouraging.

Plums found more support, and better success seemed to attend their culture, the great enemy being the curculio; but this was combated with either by jarring the trees or making a hog yard of the orchard; with these remedies thoroughly applied, many were having success. Jefferson and Lombard are first on the list for general cultivation.

The insect question came up, and seemed to be the one and greatest evil of our land, and little encouragement for remedying it could be found. What had been supposed to have been blight in the apple-trees, and so called in the meeting, was corrected by the secretary as not blight, but the result of an insect which eats into the heart or pith, and then either going up or down kills the young wood as far as it goes, being wholly confined to the new or current year's growth. This little fellow is making sad havoc in many sorts and locations; remedy we have none, as yet.

The English sparrow was highly commended for his insect-destroying propensities, and measures were taken to have them introduced into the State.

There was a fine show of fruit covering a large table, G. P. Peffer showing 41 varieties, including 13 of seedlings; J. Gould 14 sorts; D. W. Adams 20 sorts, besides a number of smaller collections. The annual election resulted in choosing Dr. Joseph Hobbins, President; A. G. Tuttle, Vice-President; F. S. Lawrence, Corresponding Secretary; O. S. Willey, Recording Secretary; Geo. A. Mason, Treasurer.

The society is in a very prosperous condition, with a handsome amount in their treasury, and a determination to press forward in their good work. We have no doubt of their ultimate success as fruit-growers.

MADISON, WIS. O. S. WILLEY.

COMMON SENSE.

PRESIDENT HAMMOND, of the Warsaw Horticultural Society, in his last annual address, December 30, 1868, conveys in a few plain words some sound practical wisdom, worth the attention of beginners in fruit culture. "It is a very prevalent idea that it is the easiest thing in the world to manage a farm or fruit plantation; while it really requires more brains to become a first-class farmer or horticulturist than to become a successful merchant, banker, or artisan. An ignorant, blundering man, may occasionally produce a crop of corn or wheat; but in these days of innumerable insects and diseases, he cannot succeed in profitable growing fruit. Insect enemies will come upon him like the plague of Egypt; the locusts and grasshoppers strip the trees perhaps of their foliage. The curculio will constantly renew its attacks; the birds will appropriate the cherries and early berries.

But the man who would become a fruit-grower, and has not sufficient energy to boldly meet and finally overcome all these obstacles, has mistaken his calling, and had better turn his attention to some other pursuit.

Perhaps a word in regard to the profits of fruit culture may not be out of place at this time. Will it pay, is a question often put to the practical fruit-grower. Can I enjoy the poetry and pleasure the business affords, and at the same time make it pecuniarily profitable? We answer, yes. Still it is our duty to warn the novice of the difficulties he may expect to encounter—for in common with other avocations it has its perplexities. A few years ago a grape mania swept over the country, and hundreds of vineyards were planted in our own country. What is the result? Some were planted on uncongenial soil, others with tender or unhealthy varieties, while others have suffered from mismanagement, so that all have not proved a suc-

cess; yet most of them are yielding their owners a fair profit.

A year or two later every body was planting pears, and many of our fruit-growers predicted that the market would soon be glutted, and prices ominously low. But we have seen that three fourths of the trees planted have failed entirely, and one half of the remaining fourth are in an unhealthy condition. In view of these facts—is pear culture profitable? Certainly it is, to those that possess the requisite skill to make it a success.

He who would succeed as a horticulturist must be in love with his profession; he must adopt it as his business, and identify it with his life. He must be a close observer, possess an indomitable will, and a large amount of patience and perseverance. He must be a man who has learned to labor and to wait. Not to labor for a season—to plant an orchard or vineyard, and then sit down and wait with folded hands, expecting, without further effort, to gain Pomona's fairest treasures. But to labor constantly and earnestly, in season and out of season, firmly believing that the reward will surely come."

Liquid Manure.

In the report of the Commissioner of Agriculture just issued, there are some facts given by Wm. T. Rand, as to his experiments in the use of liquid manure. We make a brief abstract. Leaching all the waste soap-suds, slops, and dishwater through fresh barn-yard manure, and then applying the resultant liquid to the soil in his hot-house, it revived and nourished his flowers and plants, and increased the temperature to such a growth of vegetation that it almost seemed the work of magic. By adding one bushel fresh wood ashes to ten bushels of stable manure, and leaching soap-suds through this mixture, the alkali addition had the strengthening effect of maturing the woody parts of vegetation, and diminishing the vine-growing plants. Leaching soap-suds through a peck of fresh hen manure and five bushels of cow droppings yielded a liquid that had a most vigorous effect upon all vine-growing plants, and the contrary result upon fruit-bearing plants.

From a succession of experiments made to obtain a liquid manure, for universal use, Mr. Rand at length filled his hopper with the most varied and promiscuous mass of decaying vegetation and animal matter that could be collected; such as lime, rotten wood, decayed weeds, refuse meats, old bones, iron, ashes, leather, slops, indeed every thing of a perishable nature on and around a farm. The top course of this compost consisted of lime, ashes and sand, for the purpose of keeping the fermentation beneath the surface. In the liquor itself, as it came through; a bag of charcoal was placed to deodorize it. And now, to show the value of the liquid thus obtained, he constructed three beds in which to grow onion sets. One of these was composed of good soil, into which rotten compost and old barn-yard manure was worked into. Into another bed, phosphates and patent fertilizers were used, and thoroughly incorporated into the soil. And in the third bed the soil was turned up, and to a suitable degree saturated with the liquid manure. The onion sets were planted alike in the three beds. And now mark the result. The soil prepared with the liquid manure was so productive that the onions matured and were eaten in the spring, before the remainder reached a size fit for table use. Parsnips, beets, and cabbages were also tested with similar results.

The greater or less advantage that a soil, saturated with liquid manure, has over a soil made rich by dry fertilizers, depends much upon the season. In a wet season, the advantage would be slight. But in a dry season, undoubtedly the most marked results would be apparent.

Notes from the Fruit-Growers' Society, Harrisburg, Pa.

Northern Exposure for Orchards.—Mr. Sprout gave his experience in planting an orchard with a southern exposure; it was a total failure. His neighbors, who planted upon land inclined to the north, had gathered fine crops. Mr. Harvey reported that of an orchard of twenty-four hundred trees, mostly in fine condition, but with a southern exposure, not twenty-four peaches were obtained.

Mr. S. W. Sharp reported that peaches in the valleys of Newville failed entirely, while an orchard of his on the North Mountain fruited well.

Mr. Bissell gave an account of the mode of culture in Northern Indiana: The trees were planted in the central part of islands; forest trees were left standing on the outskirts for protection. Trees were headed low, and present the appearance of a bush.

Mr. L. Reist reported failure in lowlands of Lancaster county. Trees planted on highlands did well. Trees that he saw on bluffs of Kansas and Missouri were healthy and productive.

Mr. Bernheisel observed that near the Tuscarora Mountains, in sections exposed to winds, that trees were more productive than in valleys in which the excessive moisture was not driven away.

Secretary Heiges, who has closely observed the fruitfulness of the orchards of York county for the last six years, stated that much depended upon natural position. He would select a northern exposed position if possible, so as to naturally underdrain the trees, prevent "wet feet," and delay blossoming period. If land cannot be naturally drained, would under-drain. Mr. Meehan stated that years ago he had recommended under-draining, but would not do

now. It proves beneficial for a few years, but as the trees grow, the roots extend into the drains and clog them. It is a useless expenditure of muscle and money. Would highly recommend surface draining. Mr. P. Reist had not been instructed by any thing that had been offered to prevent the freezing of peach or apple trees. We must expect a recurrence of cold winters, by which our trees may be killed. Trees like men succeed each other generation after generation. We must plant year after year—plant, plant, plant. We have improved quality, but not vitality.

SOILS — HIGH MANURING. — Mr. Harvey thought we should discriminate between locations and soils before we should advocate culture or non-culture. Some report five crops without cultivation; others know that certain varieties need protection and culture. Many trees lose foliage; we must feed our trees like our cattle, if we wish them to endure the rigors of our climate.

Mr. Kessler had lost some fifteen of his trees by high manuring. Young trees would produce weed, but not fruit.

Colonel Meschert, of Philadelphia, sent manure by the boat-load to his country residence. His trees grew, but he had no pears.

Mr. Sharp reported that Mr. Martin, a successful fruit-grower, of Mercersburg, cultivated very highly.

Mr. Meehan had passed through all these experiences. He thought we must pass to something beyond either soil or cultivation. What was often called "good" cultivation often produced a most barbarous cultivation, and the poorest cultivation often proves most beneficial. He read a letter from James Nelson, who gathered little or no fruit from vines well cultivated: the same vines afterwards being removed to poor soil and planted shallow have borne most abundantly.

Mr. Sprout thought that the wash from roads and manure yards was essential to productiveness. Trees in Susquehanna county on poor soil, devoid of the wash, failed entirely. He manured some of his trees well and they died.

Mr. Parry said: We should go beyond soil or location in our considerations. We should attribute general failure to cold wet weather during blossoming; should not lose sight of good manuring and good culture. Uncultivated and unfed trees might succeed in protected positions, but under no other condition.

GRAPES.—Mr. Meehan said he could sum up his successful grape culture in a few words: Grounds cannot well be too shallow, too warm, too rich, or too dry.

Mr. Calder planted Concords last season on rich bottom lands—did not do well; planted others on thin soil—grew luxuriantly.

Messrs. Cruckwell and Sprout noticed old vines of theirs cracked their entire length last winter—attributed cracking to severe frosts.

Mr. H. Engles reported that H. M. Engles' Concord vines did very well last season; old vines cracked extensively; thought it was the result of frost.

Mr. Meehan reported failures in lowlands of Berks county, while vines planted on poor highlands fruited abundantly.

Mr. L. Reist planted Delawares on low grounds—failure. His neighbor planted on high position, and his Delawares were perfect.

Mr. Kessler planted a Clinton vine on a stone pile covered with ground. It is the finest vine he ever saw.

Mr. Cruckwell reported failure of Delaware on lowlands, success of Delaware on highlands. Success of Anna and Delaware on lowlands, and failure of same on highlands.

Mr. Meehan is opposed to deep planting, because he cannot drain as well from deep planting as from shallow planting.

Mr. Gross could never get a crop of grapes from a shallow soil; but by getting a mulch of six or eight inches, he can raise crops of such varieties as succeed with him.

WHEN SHOULD WE PLANT OUT EVERGREENS?

THERE are advocates of *three theories*, namely, planting in the Fall, in early Spring, and late Spring, and again others have serious objections to any or all of these plans: one grower says, he would not plant any kind of a tree in the fall on heavy soil, for the trees will often be thrown out by the frost: another says, that if he were to receive a lot of evergreens this very day, in early Spring, he would immediately put them out.

We have had a personal experience with all these plans. We transplanted a fine lot of evergreens (Norway spruce) in the month of August; as recommended by the nurseryman, did what we could to protect them, but when Spring came, they were all dead. We tried early Spring for planting them, but had the same result; at last tried the first two weeks of the month of June, and succeeded admirably. We transplanted some Hemlock spruce in the month of September or 1st of October, taking care to mulch the roots of the trees, after the earth was filled in, these too have kept well.

Hence from our own personal experience, we can safely say that the best time for transplanting evergreen trees is between the 15th of May and the 15th of June; for the hardy evergreens, the month of September or October is good, taking care in each case to *mulch* the ground well, and particularly to see that the trees are well packed and the roots kept moist and unexposed. If the distance of transportation is quite short, evergreens may be safely transplanted as late as the 15th of June; but if transportation is distant, it is better to place them in the ground a little earlier. Choose a wet moist day for digging, and also for planting.

Tree Currants.

Ebenezer Akin, of Fairhaven, Mass., communicates to the Farmer's Club, New-York, some information as to raising currants like trees. I have a number that are over an inch in diameter. In the spring I take shoots of the previous year's growth, and cut off the buds that would come under the ground when the shoots are set. I cut them so that they will not sprout. I then sharpen the ends of the shoots, and stick them in the ground. Where the buds were cut off, they will send out roots without sprouts. I keep the growing shrubs well pruned. Upon the whole, however, I think the old bush way, with judicious pruning out of the oldest and some of the youngest wood, is preferable. There is a fly that deposits its eggs near the top of the stalk, which eats in and destroys the pith for the whole length of the stalk; but I don't see that it hurts its bearing, only that the stem commonly breaks off where the worm eats out. I see that some one of the club recommended searching trees in the fall and winter for the eggs of the caterpillar. I have only two apple-trees, and when the caterpillar forms a nest on them I take a pole and sharpen the end and wind a rag around it, and wet it well with whale oil or petroleum, and with this I destroy the nest, and it is never rebuilt. I have seen the caterpillars several rods from the trees, crawling on the ground, after being dispossessed by this treatment. These caterpillars are very injurious on cultivated fruit-trees, but the wild cherry and beach plum are their favorites. Some time ago I sowed a little tobacco seed close around the trunk of an apple-tree, and since then no borer has touched the tree. I have bored into the heart of a tree when I knew a borer was at work, and filled it with tobacco. I would ask if a pipeful of tobacco in a tree will injure the fruit. The favorite trees of the borer are the locust and the quince, the latter of which it has almost annihilated in this section. I will state another item. A few years ago a bunch of peach plums, within a stone's throw of my garden, was covered with caterpillar's nests. I poured a little whale oil from a lamp trimmer on a large number of nests, and they were soon all deserted.

Much or Little.—The agricultural press are stimulating the farmers of the United States to devote more of their garden and land to the culture of small fruits for family purposes. This is right; but we must not forget to give credit to another class of the people of the country, who, though they have but *little* land, still do far more in proportion than those farmers who possess *much*.

We refer to the mechanics. We have often seen a farmer's garden side by that of a mechanic's. The former was larger than the latter, but somehow as one looked at it, there appeared a great want, hard to describe—the general appearance was bare and plain.

In the mechanic's garden, one could not help being pleased with the disposition to convert every inch of available space into an opportunity for *use* or *profit*. Currants, gooseberries, strawberries, blackberries, raspberries, each had a row, in addition to the space necessary for vegetables; while in the corner or on the edge of one of the borders, a pear-tree or a plum-tree hung over. Even room was found close to the path for some choice flowers and climbers and shrubs. A little garden like this is a perfect delight to one whose ears are tired with the dull monotonous roar of a manufactory ten long hours every day; and the charm not only of novelty but of contrast helps the poor mechanic, and stimulates him to produce results from his little garden which a sturdy farmer of a hundred acres can never bear comparison with.

Mrs. Pince's Black Muscat Grape.—This new exotic grape, which has been heretofore noticed in our columns, continues to give great satisfaction to English growers. We have a vine of the variety which we hope to fruit during the coming season, and shall then be able to speak understandingly of its merits. A writer in the *Gardener's Magazine* who has lately visited the vines in possession of the originators, Messrs. Lucombe, Pince & Co., says that he can add his testimony to that before given of the superior merits of this new grape. "Not only in flavor, but for hardiness of constitution, and its great merit of ripening without artificial heat; and as to its bearing qualities, it has every year been literally covered with fruit." Mr. Meredith, of Garston, an extensive grower of foreign grapes for market, says, "I have two vineries already planted with it, and shall soon fill another 144 x 26 feet. W.

Large Magnolia Tree.—In a letter from M. B. Bateham, Secretary of the Ohio Horticultural Society, he mentions that there is a native tree of *Magnolia acuminata* standing on one side of the lawn in front of his residence, near Painesville, which is the largest and *most profitable* specimen of the kind that we have ever heard of. It measures fifteen feet in circumference, four feet from the ground, and tapers very slightly for about thirty feet in height, where the first branches appear; the whole height is about seventy feet, with a head in good proportion. It annually produces nearly one hundred pounds of seeds, (nearly the size of small beans,) which are picked up by the children (with some loss by the hens) and sold to nurserymen for $60 to $75. This fund is divided among the six juveniles at Christmas. This in addition to the ornament and shade makes it certainly a very profitable tree.

Illinois Industrial University.

From reports of the annual course before this institution, we make the following notes, acknowledging ourselves indebted to the Chicago *Weekly Tribune*, *Prairie Farmer*, and others.

ORCHARD FRUITS.

Dr. E. S. Hull, of Alton, opened the course for the second week. He took the ground that to have orchard fruits we must have a general knowledge of soils, trees, and their peculiar needs. Orchard fruits have improved from the wild type by cultivation until they present such as we have at the present day in our orchards; this improvement has been the result of long years of culture. The idea that nursery trees brought from a point north of the place of planting are better, he held to be a fallacy; trees grown by forced culture, whether north or south, are equally worthless.

PRUNING AND LOW HEADS.

On account of insects, he recommended heads at a moderate height, and stated that low heads, or those branching at the ground, were a failure, for the reason that they harbor insects, especially the curculio and the codling-moth. Pruning should be moderate, by judicious thinning.

FRUIT-BUDS.

Fruit-buds are killed by the frost by being ruptured at the centre. In the case of peach and cherry buds, this injury is marked by a small black speck in the centre. Leaf-buds contain no elements of fertility and are not so liable to be ruptured. Peach buds are not killed by any specific degree of cold. Good crops have been grown at Alton with the thermometer at twenty degrees below zero; but in this case the buds had not been swelled by warm weather, for when this occurs, a very much higher temperature will prove fatal. Fruit-buds are sometimes changed to wood-buds, or rather some fruit-buds are defective, and they form leaf-buds.

FRUITFULNESS.

A vigorous growth makes tendency to wood and leaf-buds, and these being the most vigorous, the fruit-buds, thus weakened, fail to be perfected. The first growth or development is from the stock of nutriment stowed up in the sap-vessels, enlarging the buds into leaves and sending out spongioles from the roots; after this the food is supplied by the leaves and roots through the spongioles.

ANNUAL BEARING.

The spurs fully developed must be thinned out, leaving the spurs of one year; in this way the crop is lessened, and a moderate crop protects the tree from overbearing, and it is thus capable of producing a fair crop the following year.

LATE AND EARLY BLOOMING.

All varieties reach the same period of blooming and the full development of the pit at the same time, and the notion that early peaches bloom earlier is all an error.

THE PEACH.

The crop must be thinned, so that the specimens will all be fully developed. In good crops, forty-eight to fifty peaches to the box, is one third of a bushel, or one hundred and fifty to the bushel. Those who pay ten cents for a peach may thus have an idea of the rate per bushel that they pay for this fruit at the stands.

APPLES.

In times past this fruit was grown without trouble or risk of a crop; but now, with the new insects, it is a difficult matter, and we must hereafter have a crop of apples at the cost of unceasing vigilance.

PLUMS.

Coe's Golden Drop, Jefferson, and Washington are the best; but Columbia appears almost curculio-proof, and for this reason is very desirable. Plums should be planted on the outside of an orchard to hold the curculio, from which they are shaken into sheets and destroyed.

Mr. Freeman would inquire in regard to changing leaf to fruit buds. *Answer.* The bud is a leaf-bud at all times, and the change to a fruit-bud is by an addition of new forms of growth.

PEACH-TREE GRUB.

This subject was discussed *pro* and *con.* Boiling hot water poured on the roots of the trees was recommended; but the only safe way is to cut out the grubs. Colman, of St. Louis, took exception to the theory of the high tree-tops of Dr. Hull, and would prefer three to four feet instead of five. The tansy plant will keep out the grub; but the remedy is not a profitable one.

Heads of the apple must be of sufficient height to admit of the application of hay bands, as proposed by Dr. Trimble; and also to keep off the curculio by the aid of the curculio-catcher of Dr. Hull.

GRAPE CULTURE.

Hon. George Husman, of Missouri, one of the pioneer grape-growers of that State, and the author of a popular work on grape-growing, addressed the assembly.

He said that old things had passed away and that all things had become new; that railroads and new inventions had made a new order of things. From two hundred gallons of wine, or one even, we now make a thousand to twelve hundred gallons; and now sell hundreds of pounds of grapes to a pound sold twenty years ago.

Wine will make us a more temperate people,

and will drive out the poisonous drinks of the present day. Seventy-five cents a gallon is a fair price for good, pure wine. America will not only grow all the wines that will be required at home, but furnish a large amount for export.

Mr. Edwards would inquire if our subsoil is too tenacious for growing the vine without underdraining. Mr. H. thought that tile-draining would be desirable; that in preparing the soil deep plowing was all that was required, and that trenching with the spade was of no great value over that mode. Good corn soil will grow Concord and Hartford Prolific. Plant Concord six feet in the rows and rows ten feet wide. Concord, Martha's, Rogers's, Nos. 1, 3, 4, 8, 9, and 22, Norton's Virginia, Cynthiana, Herbemont, are among the best. A southern slope is the best aspect. Trains on wire trellis are the best and most economical. It will take an acre of timber to supply posts for an acre of vines, and hence the wood trellis is too expensive for use on the prairie. The trellis has posts every twenty feet, and three wires of No. 12 are fastened to this in fan-shaped form. Do not manure extensively. Surface soil and leaf mould are the best manures. Never seed the land, but keep clean all the season. Use the corn plow in cultivating. In planting, put the lower set of roots a foot deep. To the question, How to keep the grapes best? he said, in the liquid form. Shoot some buds, otherwise they would do much damage. No American grape will make raisins. Dr. Warder describes grapes as: 1. The pulp grape; 2. Liquid grapes, no pulp, but skin, liquid, and seeds; 3. Fresh grapes, or raisin grapes.

DR. WARDER—PROPAGATION.

We may propagate by seeds, buds, cuttings and layers, by stolons or horizontal shoots, which take roots at the buds, the strawberry is an example—by suckers or shoots that start off from some point of the roots, by division of the stems, by root cuttings or pieces of the roots—blackberries are thus propagated; only such roots as have buds can be thus propagated. Seeds are the most convenient, for the reason that they maintain their vitality, some of them for long years, and it is supposed, in some cases, some thousands of years.

Many of our fruit and forest seeds may be dried and sown in the spring; among them some must be soaked in water for days and weeks; others, like the acorn and chestnut, should be planted as soon as ripe and not allowed to become dry. In planting, they must be planted shallow, the surface smoothly raked and rolled.

CULTIVATION.

This object is twofold: one to encourage the growth of the plant by administering air and moisture; and in the next place, to destroy noxious plants that would interfere with the growth of our plants of culture. But we must not cultivate too late in the season, as that might make them tender and liable to injury by frost, or rather to freezing and thawing, which would weaken their vitality.

SMALL FRUITS.

Samuel Edwards, of Bureau county, read an essay on this subject.

For some years the small fruits were cultivated in Illinois and appeared almost exempt from insect enemies; and as they could be easily protected from cold by shelter and mulching, it is no wonder that these fruits became popular, when we take into further consideration their desirable qualities as food. Now we have a changed climate, and many new insect enemies, that tend to make their culture more exacting.

In the culture of the strawberry, he uses a colter of a bar of iron, half an inch thick and three inches wide, not sharpened. This is used as a colter, having been pointed and drawn through between the rows to the depth of fourteen inches. Strawberries should be mulched after the ground has been frozen, using clean straw or prairie hay.

Mr. Rice, of Champaign, gave an account of how he grew strawberries. Planted four and a half acres of this fruit, in rows three and a half feet wide; would now prefer the hill system. Mulched with four tons of hay to the acre. Clean culture is essential. Had 610 bushels from the lot the second year. The crop is easily grown, certain of a good yield, and thus far very profitable. The formula is simply this: trench-plow the ground a foot deep, make it rich, plant in hills fifteen inches in the row; rows three feet and a half wide; keep off the runners with clean culture, and mulch as stated. It was also suggested to run a Mapes subsoil-plow along each side of the row, as deep as two horses can draw it, occasionally during the summer after the mulch has been taken off, for the purpose of culture.

List of Flower Plants.

The following list of plants may be sown in April, and will flower from June to September:

Yellow. — Oxalis Tropæoloides, chocolate-red leaves, very neat for edgings; Leptosiphon Aureus and Luteus; Sphenogyne Speciosa; Sanvitalia Procumbens, a half-hardy annual; Tropæolum Tom Thumb.

Blue.—Nemophila Insignis; Lupinus Nanus; Whitlavia Grandiflora, and Campanula Speculum.

Scarlet.—Tropæolum Tom Thumb, crimson.

Purple.—Linaria Bipartita splendens; Iberis Umbellata; Campanula Pentagonia.

Rose and Pink.—Saponaria Calabrica; Silene Pendula.

Lilac.—Clarkia Elegans and Lupinus Venustus.

This list is but a small one out of the thousands of flowers, but the above may be worked up into a skillful flower-bed effect.

Eastern Ohio and West-Virginia Horticultural Society.

A new and vigorous Horticultural Society has been fairly inaugurated at Wheeling, West-Virginia, composed of grape-growers and other cultivators of small fruits, mainly in the vicinity of the Ohio river, on both the Ohio and the Virginia sides. At a meeting on the 26th of December, Mr. Thomas Holbrook, an intelligent and energetic horticulturist, was chosen President of the Society for the year 1869, and Lewis Baker, proprietor of the Elm Ford Fruit Farm, was made permanent Secretary. In addition to the grapes, apples, and other fruits exhibited, some very creditable specimens of wine from the Delaware, Ives's Seedling, Creveling, Concord, Isabella, and Catawba were presented. Grape-growing in that vicinity is quite an important interest. The soft or shale lime hill-sides near the river have been found to be just the soil required by the Catawba, as well as most other varieties. There are vineyards of twenty years' bearing which have never missed a crop. Many of the new varieties are doing exceedingly well there. The Creveling is cured of its slovenly habit of bearing loose and ill-formed bunches: thereabouts its bunches are large, compact, superb. The wine presented from the Creveling and Delaware, grown on their warm southerly hill-sides, was of very high character.

Peach-Trees.

Editor of The Horticulturist:

I and my neighbors in this section have succeeded in raising regular crops, about every other year, of good peaches, and that, too, where there are no large bodies of water, and not much forest protection.

Now and then there is an old tree left, twenty, thirty, or even forty years old, and as often on a hill and unprotected as otherwise, that bear about every other year, some of them very full crops; while our more recently planted trees, unless thoroughly protected, pretty generally refuse to bear good paying crops.

I feel pretty certain that we have injured, or somewhat impaired, the bearing principle in many of the old sorts, by *continually budding from young trees*. The Old Early York, the Crawford, that used to be No. 1 bearers, are so no longer, and many other old sorts seem to live along the lakes and in peach regions, but almost totally refuse to bear. There is certainly something the matter. The curl of the leaf in 1856 was much the worst on Crawfords and other yellow-meated kinds; in 1867 the yellow-meated sorts pretty generally escaped, while the white-fleshed sorts suffered severely; yet, after all, with me and my neighbors the white-fleshed ones bore much the best.

But this curled leaf, I think, is a transient thing. The great cause of our failures is simply because the trees are not of the right kind. The stalks are from *late Southern pits*, and of *rampant growth, not satisfied with our length of summer*. This is the cause of the great failure from year to year. One of my neighbors bought and planted peach-trees five times, and five times they have frozen to death, root and branch; while some old trees standing in his garden lived and bore well. A hardy tree is worth more to the world than all the protection peach-trees are likely to get; we should look for signs of hardiness both in stalk and top. We cannot induce early ripening to any favorable extent by summer-pruning; Mr. Downing's plan, of shortening in the last year's growth annually, makes the tree stouter and less liable to break down with ice, snow, or fruit; but it does not make the tree ripen any earlier, or stand the winter any better.

The pruning away of immature wood and leaves, about the first of October, makes the tree no hardier; the remaining unripe buds will start the first warm day, and attempt to make more leaves. We can not change the nature of a late-growing tree to make it early. I speak from experience; for I have made peach-growing a part of a business for more than half a lifetime, have traveled the shores of our lakes—Lake Michigan and the State of Ohio—and think I know something of the *favorable and unfavorable surroundings for peach orchards, why we have failed, and how we may yet succeed.*

N. P. Hedges,
Wales Centre, Erie county, N. Y.

Wine-making at the South.—The comparative advantages of a Northern or a Southern climate, as a section wherein to grow grapes and make wine, have from time to time been discussed, each resident writer of a section claiming his own as best; but we find in a late number of the *Southern Cultivator* the following acknowledgment of a want in temperature for fermentation, which is perhaps honest if not wise:

"On the subject of wine-making I have a fixed opinion, that the late ripening grapes are the best. Our climate is too warm, in July and August, for a regular vinous fermentation; and those who are at all successful add two or three pounds of cane sugar to the juice. I would avoid this necessity by having, if possible, a cooler climate. I have examined a French work of high authority, *Le Parfait Vigneron*, issued by Chapel Rosier and others; and from that work I learn that the wine cellars of France, in which fermentation is conducted, have a temperature of 54° Fahrenheit. And I have tested the water of a well in this place, fifty feet deep, and considered cool to the taste—the thermometer stood at 67°. Evidently, we can not have a fermenting cellar of the right temperature in this climate. I wish to try the cooler season of October, and want grapes that ripen then."

Naming the Rogers Grapes.

Mr. Editor: In response to the request of the Committee of the Lake Shore Grape Growers' Association, Mr. E. S. Rogers, of Salem, Mass., has consented to give names to the leading varieties of his hybrid grapes, in place of the numerals by which they have hitherto been designated. He proposes the following, with the remark that the English and German names are of persons who have been eminent either in the botanical or horticultural world, or for scientific and literary attainments, and to whose works he feels much indebted; and the Indian names are those of counties and towns in Massachusetts: For No. 1. Goethe; 3. Massasoit; 4. Wilder; 9. Lindley; 14. Gaertner; 15. Agawam; 19. Merrimack; 28. Requa; 41. Essex; 43. Barry; 44. Herbert.

M. B. Bateham, Sec'y. L. S. G. G. Ass'n.

Editor of the Horticulturist.—I endorse, from personal observation, the correct descriptions of the Crimson Cluster Tomato, and the new Rose, "Gem of the Prairies," as I saw the former in ripe fruit, and the latter in full bloom, on Mr. Henderson's grounds at Bergen.

I have met here in Philadelphia with some other novelties worthy of notice, "*Laxton's Prolific Early Long Pod Pea;* grows three feet high, needing stakes for support. The vines are literally covered with pods, having ten and twelve peas in each, of fine quality, and succeeding the Philadelphia Extra Early. It produces prodigiously heavy crops. It has been grown here but a year, and but few know of it. The seeds are planted three inches apart, and the rows are three feet apart, thus a pint of this pea will crop as much ground as three pints of other peas.

The Dwarf Waterloo, Late Branching Marrow Pea, grows but fifteen inches tall, producing immense crops of pods, having eight peas in each, and of superior quality. The seeds are planted four inches apart, (as bush beans are,) and the rows only eighteen inches apart, thus a very large crop is produced upon a small space.

In real superior qualities, either or both of the above are unsurpassed.

The "McLean's Advancer" and McLean's Little Gem Pea, are highly commended as being of exceeding excellence, both for their plentiful crops and superior quality.

The "Aquilegia cœrulea," a new sky blue columbine, is one of our handsomest hardy herbaceous flowering plants, far surpassing all other species of columbine, both in blossom and foliage. If it bears seeds as plentifully as the other columbines do, it will be very soon distributed over the whole nation. Is a native of the Rocky Mountains and quite hardy.

Walter Elder.

Philadelphia, Pa.

A farmer residing in the Western part of Massachusetts had, many years since, an old orchard, many of whose trees were encased in a very rough coating of bark. Their productive days seemed to be over, and the owner was counting upon a good supply of firewood from them the ensuing winter. It was suggested to him that if the bodies of the trees were well scraped, an improvement in yield might result from the operation. Some twenty of them were subjected to a vigorous application of the hoe, and the rough coating thoroughly removed. The ensuing season showed a marked improvement in their production, the credit of which, whether correctly or not, was assigned to the operation of the hoe. The experiment is easily made and the cost but trifling, even should it fail of rejuvenating the trees operated upon.

Literary Notices.

Architectural Journals.—Two new journals, or rather *three* devoted to architectural subjects, have appeared within a short time:

Sloan's Architectural Review.—Published monthly at Philadelphia, is the most prominent and perhaps the best. Although from its nature more professional than for the popular tastes, yet it is well conducted, and always contains valuable matter. It has given some very fine illustrations of churches and public buildings, and the literary matter accompanying is quite full and complete.

The American Builder and Journal of Art.—Published at Chicago, appeared last November. The style of subjects chosen for discussion and the articles written are a little too dry and labored; but the Architectural Designs are of a popular character, and generally pleasing; some are quite extensively copied into Western Agricultural journals.

The Manufacturer and Builder, New-York.—We are frank in saying that we do not like it at all. It is not architectural enough to call it an architectural journal, not mechanical enough to be devoted thoroughly to mechanics. Cover is very homely, and likely to give the reader a very unfavorable impression; the interior is well printed.

New Journals.—In addition to our remarks in the February number, we note the following new ventures:

The Southern Horticulturist.—This is a new monthly devoted solely to the horticultural interests of the South, and issued by E. K. Manhard, Esq., Canton, Miss. Dr. H. A. Swazey, formerly of the *Southern Ruralist*, becomes associate editor, and conducts it from his fruit farm at Yazoo. The price is $2 per year.

The Grape Culturist.—This is an unexpected accession to horticultural literature, and, as its name implies, is devoted to grape culture and

wine making. It is conducted by Geo. Husmann and Charles H. Fring, as associate editors, and published monthly at St. Louis, Mo. The January number before us has many valuable and practical articles from the pens of the editors and contributors; and there is every reason to believe from the abilities of its managers it will have a worthy and decided influence on Western Grape culture.

Weekly Sun.—Though not a new journal of this year, yet by reason of increased enterprise, a rapid advance in circulation and prosperity, and the supply of choice literary matter from the pens of graceful writers, it has a new and acceptable lease of life, with promise of excellent and happy returns. The agricultural department, under the editorship of our mutual friend A. S. Fuller, contains many practical thoughts; and the reports of the Fruit Growers' Club constitute alone a feature of great attractiveness. As The Metropolitan Dollar Weekly journal of the city, its title is well bestowed.

The Central Union Agriculturist.—Is a new monthly published at Omaha, Neb., $1 per year.

The present number before us speaks well for it. It seems to devote its heart and soul to the express object of forest tree culture and protection on the Western prairies.

PRACTICAL FLORICULTURE. By Peter Henderson. O. Judd & Co. New York

The public expectation of a *good* volume from the pen of Mr. Henderson has not been disappointed. The author seems to be gifted with that happy faculty of "knowing what people want" and "how to supply it." This book, from its nature, never will be to the masses as popular as a picture book of flowers, nor even the showy catalogues of seed dealers; its information is of an entirely different character: to appreciative minds, it affords food for thought; to cultivators, it gives ample directions for successful cultivation of in-door or out-door plants, flowers for the lawn or the Green House, the Hanging Basket or window gardening. We consider it a valuable acquisition to horticultural literature.

THE HORTICULTURAL ANNUAL, 1869. New-York: By Orange Judd & Co.

The principal features to attract attention in this annual are articles from some of the best known horticulturists of the country. That of Josiah Hoopes on the Clematis is complete and valuable.

That by George Such on the Gladiolus is still more interesting, and will be read with appreciation. Francis Brill has a good practical article on Asparagus culture. Apples of 1868, by J. A. Warder, has very full descriptions of the best of the new varieties. Pears of 1868, by P. Barry, is still more full. The various articles which follow from the pens of F. R. Elliot on Cherries, by the Editor on Grapes; by A. S. Fuller on "Small Fruits;" by S. B. Parsons and Josiah Hoopes on Hardy Evergreens, by John Saul on New Roses; by Peter Henderson on Bedding and other Plants; by J. J. H. Gregory on New Vegetables, combine to make up a very faithful record of American horticulture for 1868. The *Annual* is worth its price.

THE MULE. By Harvey Riley. Philadelphia: Claxton, Remsen & Haffelfinger.

A very sensible book. In regions where the mule is appreciated, his real value is far above that of the horse. A prejudice exists in many minds against the use of the mule, because so obstinate; but if they would only read this book and learn the nature of the mule, as well as the proper method of treating him, they would find occasion for holding him in higher estimation. For all farm labor, for heavy mechanical use, for patient plodding, straightforward steady work, the mule is far superior to the horse.

The interest in reading this book is greatly increased by observing the numerous illustrations.

IOWA AGRICULTURAL REPORT FOR 1867. By W. W. Beebee, Secretary. Des Moines.

This volume, though late in issuing, will repay even the most careless glance at its contents. There are many excellent articles here, such as those on "Evergreens," "Transplanting," "Hedging," "Pruning," "Raising Forests," "Orcharding," and "Fruit Culture in Iowa." Grape culture and other kindred subjects are particularly interesting and valuable. We can recommend it to public attention as a valuable addition to an agricultural library. The Society is doing a good work, and has the elements of a great prosperity.

DISEASES OF THE SHEEP. By Henry Clop. Philadelphia: Claxton, Remsen & Haffelfinger.

A sheep farmer ought to find here information enough to cure all the ails of his sheep flock as long as he lives. The book appears to be exceedingly practical and carefully written.

DIETZ'S FARM JOURNAL is the name of a new monthly journal started by G. A. Dietz, Chambersburg, Pa., in which is recorded tests and experiments in all kinds of grain, vegetables and some attention to diseases among cattle. With only one number before us, we consider it a valuable and practical aid to the grain grower, the only fault being its necessary connection as an advertising medium for the proprietors own grain.

THE GRAPE GROWERS' GUIDE is a little pamphlet of 15 pages, issued by J. Keech, Waterloo, N. Y., intended to grasp the subject of grape culture and simplify it to ordinary cultivators. The work is well done as far as it goes, but is not complete. On the subject of pruning and training, we think nothing has yet been produced in this country equal to Fuller's Grape Culturist.

Nurserymen's Catalogues.

We have received quite a large assortment of catalogues this year from our friends the seedsmen and nurserymen, and in glancing at their contents, we repeat what we have often said before, that they are a valuable addition to horticultural literature; we know of course that they are only advertisements of the proprietors' business, so much per plant, so much per packet of seeds, but really are advertisements worthless? On the contrary they are a necessity, and an agreeable one. The value of a catalogue is in its *practical nature*. What a relief it is to a perplexed mind, endeavoring to conjure up a good selection of varieties to plant in his garden or on his farm, to pick up a good catalogue from some reliable man, and there find in detail good descriptions of all the different kinds, and good advice as to their choice.

Still further, to find common sense directions how to plant and cultivate them well and gather the crops.

With the increase of the lovers of horticultural literature, the Catalogues of the Business fraternity seem to increase in beauty, taste, and size. Here are three directly before our eyes, Washburn's, Hovey's, and Bliss's, all handsomely bound in cloth, and graced with expensive colored illustrations of Lilies, Gladiolus, or engravings in abundance of choice flowers and vegetables.

The fruit catalogues of Ellwanger and Barry, Wm.S. Little and F. K. Phenix, are instructive in their hints as to the cure of fruit-trees; so too those of Purdy and Johnson, and Parry, and Knox in the care of small fruits. Peter Henderson's Catalogue of New Plants keeps us posted in Floricultural matters; while James Vick's welcome Floral Catalogue increases in beauty, enterprise and interest year after year. Truly we are doing no injustice to other craftsmen to say that it is the handsomest of its kind in the country. Gregory keeps us well informed in vegetables; and Thorburn, Dreer, and Landreth are standard guides both in the trade and among cultivators.

If there is one point on which we could suggest an improvement, it is that in the description of varieties the writer of the catalogue should not endeavor to get off as glowing and favorable a description as possible, but to aim to give as *honest an opinion* as possible. It is natural for a man to praise his own wares; and if he is a large dealer, having the "largest stock in the country," it would be absurd to praise every article, for common sense will tell any one that they can not all be *best*. Cultivators would like the dealer to specify more by numbers or order what is the best choice, than to attempt to sell all. We have always liked Thorburn's, because they aimed to help the cultivator make a selection; and Landreth's also, because with as little self-praise as possible, they aim to give the result of experiments on their own farm. The country now-a-days wants fearless men, who will take all the novelties, try them, and expose the worthless, and justify the praises of those found good. A word of caution. 1st. Do not send off any poor seed, nor *old* seed—50 cts. worth of seed saved this year, by passing off an old article, will most generally cost the dealer the loss of all the future trade of one man; 2nd. Never send off a poor plant to any one, either as a sale, or as a gift.

We purchased last fall over 400 pear-trees from one nursery firm, represented first-class. When they came, all were undersized, the stocks old—but grafts young—and generally a third-rate selection. We immediately returned the whole stock to the nursery from which they came, and compelled them to make them good. We advise all fruit-growers to do the same. In addition to the catalogues briefly noticed above, the Editor has received the following catalogues and pamphlets:

Catalogue of Flower and Vegetable Seeds.—Henderson and Fleming, New-York.

Catalogue of Flower Seeds.—A. Bridgeman, New-York.

Catalogue of Small Fruits, Roses, etc.—J. B. Cline, Rochester, N. Y.

Catalogue of Trees, Vines, and Shrubs.—J. W. Manning, Reading, Mass.

Catalogue of Arnold's Canadian, Hybrid Grapes, and Raspberries.—Charles Arnold.

Paris Nurseries.—Paris, Ontario, Canada.

Circular of wholesale prices.—William S. Little, Rochester, N. Y.

" " " " Ellwanger and Barry, Rochester, N. Y.

" " " " Hoopes Bro. and Thomas, Westchester, Pa.

Vick's Illustrated Catalogue of Bulbs.—Rochester, N. Y.

Old Colony Nurseries' Catalogue.—B. M. Watson, Plymouth, Mass.

Calendar and Seed Annual.—Maupay, Hacker & Co., Philadelphia, Pa.

Catalogue of Flower and Vegetable Seeds.—James Sheppard, New-York.

Report of Wisconsin State Horticultural Society, 1868.—Madison, Wis.

Transactions Massachusetts Horticultural Society, 1868, Boston, Mass.

Physical Survey of Virginia.—By M. F. Maury, 1868. Richmond, Va.

The Charleston Phosphate Beds.—Ashley River Phosphates. By N. A. Pratt, Oglethorpe University, Ga.

Circular of the Marengo Winter Crab Apple.—C. Andrews, Marengo, Ill.

Transactions of the California State Agricultural Society, 1866 *and* 1867.—Sacramento, Cal.

Bricksburg Nursery Catalogue.—Calkins and Brooke.